“THEY GOT CORN OUT HERE IN THE HEART OF THE GHETTO?” COMMUNITY PERCEPTIONS OF URBAN FARMING IN BALTIMORE, MARYLAND

by
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Abstract

Urban farming—a type of urban agriculture that emphasizes income generation—is promoted in cities across the U.S. as a strategy to revitalize vacant land and increase access to fresh produce. Yet its viability depends on local community support. This dissertation research explores the dynamics between urban farms and local community members in Baltimore, Maryland, employing a qualitative collective case study design to gain an in-depth understanding of community perceptions of urban farming as a use of vacant land, influences on these perceptions, and processes for gaining local support for urban farming. Cases included: 1) active urban farms and the surrounding neighborhood (two sites); 2) vacant lots where new urban farms were planned and the surrounding neighborhood (two sites); and 3) neighborhoods where a proposal to start an urban farm was withdrawn based on objections by residents (one site). Data collection involved semi-structured in-depth interviews with urban farmers (*n*=8), neighborhood leaders (*n*=12), city residents (*n*=21), and key stakeholders (*n*=8); 25 hours of unstructured participant observation at farm sites; and document review.

Study findings reveal that although community members perceive urban farms as contributing to neighborhood improvement in multifaceted ways, the importance of community buy-in processes for building positive relationships between farms and communities cannot be overstated. One barrier to buy-in is the perception of urban farmers as neighborhood "outsiders," which farmers overcome by engaging local residents. Furthermore, the dichotomy between *community* and *commercial* farms plays a role in defining the farm-community relationship, with community farms prioritizing community engagement over economic exchange while commercial farms build

community support using strategies that fit within a market-based framework. Finally, although interviewees extolled having a source of fresh food within neighborhoods, this benefit played a lesser role in residents' acceptance of urban farming than others, particularly improvement of physically degraded space. These findings highlight the importance of assessing urban farming holistically in terms of the full range of benefits it can provide. Ultimately, this research contributes to the food systems literature and on-the-ground efforts to scale-up urban farming by providing insight into the influences that result in community support for urban farms.

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Alternative agrifood institutions: Locally-based initiatives and organizations that challenge the industrial food system and seek to build alternatives that are environmentally sustainable, economically viable, and socially just. Examples include farmers' markets, community supported agriculture, community gardens, and small-scale organic farms.

Community buy-in: Stakeholders', participants', or local community members' acceptance of and willingness to actively support a project.

Community garden: A single site, which may or may not be broken into individual plots, that is gardened by multiple people. Produce is consumed directly by the gardeners or shared/donated, but is not typically used to generate income.

Food desert: An area that lacks access to healthy and affordable food through lack of physical ability and/or financial means.

Urban agriculture: Urban agriculture is comprised of small areas within cities, such as vacant lots, gardens, verges, balconies and containers, that are used for growing crops and raising small livestock or milk cows for own-consumption or sale in neighborhood markets.

Urban farm: An urban farm is a type of urban agriculture that has a primary emphasis on income-generating agricultural activity.

Urban farmer: An individual or group that manages an urban farm. For the purposes of this study, this may be an individual or group of farmers, a community-based organization, or a for-profit company.

Chapter 1. Introduction

For many, the word "farm" likely evokes imagery associated with rural farming—the sight of corn neatly aligned in vast rows, the smell of manure emanating from a barn full of cows, the sound of a tractor rumbling across fields. However, riding a wave of excitement about local food, a different type of farm is quickly springing up around the country that challenges this imagery in every way: the urban farm.

Like urban gardens, which are a common site in cities across the U.S., urban farms utilize unused city space to produce food. However, urban farming differs from urban gardening in its focus on production: it is a commercial venture where food is grown for sale or broader distribution rather than for consumption by the grower. It also differs markedly from its rural counterpart. Compared to rural farms, urban farms are small—usually a few acres or less. The crops are diverse and frequently include vegetables and herbs rather than commodity crops. If animals are present, they are the small ones permitted by municipal regulations—chickens, rabbits, bees. The sound of rumbling tractors is absent, as most labor is manual.

Aside from the similarities described above, urban farms differ drastically from one another in terms of their goals, forms, and locations. They may focus on production and profit, or they may make social and educational goals their priority. In terms of form, they can range from a tight cluster of hoop houses anchored to an asphalt-covered lot, to something more like a large garden overflowing with squash and tomatoes. As for location, urban farms are found in all types of urban spaces, ranging from a parking lot of an industrial section of a city to the center of a residential neighborhood. And unlike rural farms, where the nearest neighbor might be miles away, the people one might see at

urban farms are diverse: a gaggle of student volunteers, neighborhood children learning how to plant seeds, a local resident stopping to buy a bunch of carrots. And just beyond the boundaries of the farm: people coming and going from their homes, commuters driving past, passengers waiting across the street for a bus. Despite differences that may exist in their goals or structure, urban farms must integrate themselves into a social landscape that is at once a challenge and an asset.

The social nature of urban farming is a major motivation for growing food in a city as individuals and organizations work to increase access to healthy foods and connect consumers and growers. However, it also creates a new challenge for farmers, for the viability of urban farms depends in part on whether urban communities see farming as an acceptable use of city space. Urban farming not only challenges the traditional imagery of farming, it may also challenge the image people have of urban living. Whether city residents accept the idea of having a farm in their neighborhood depends on whether they see the farm as benefitting their community. This, in turn, depends on how urban farmers interact with the neighborhood and the efforts they make to engage residents and gain their support, as well as characteristics of the farm itself.

Urban agriculture can provide substantial health, social, ecological, and economic benefits to communities. As one type of urban agriculture, urban farming can similarly contribute to neighborhood improvement. Considering this potential, it has been promoted at multiple levels, paralleling broader trends seen in urban agriculture. In Baltimore, Maryland, the site of this study, individuals and community groups have started urban farms as businesses and as non-profit social enterprises, bolstered by supportive municipal policies as well as local organizations.

As urban farming continues to receive widespread promotion, it is increasingly important to examine its social impact. Urban farms are most likely to survive and thrive if they have local support, but how can these projects gain this crucial community buy-in? How do city residents perceive the effect of urban farms on their neighborhoods, and how do they reconcile the use of city land for farming, a decidedly rural practice? And how do different models of urban farming address broader issues such as social inclusivity and food equity? These are the questions that are addressed by this research.

1.1 Study aims

I began my research with a single guiding question: While local food advocates, urban planners, public health professionals, and other "experts" view urban farming as conferring important benefits to cities, what do the people who live in proximity to urban farms think about using land in their city neighborhoods for farming? Having heard anecdotes about urban farm proposals that were rejected by communities, I wondered what aspects of urban farming might antagonize local community members, and how the people working to establish urban farms use community buy-in strategies to help overcome these grievances. My hope was to give voice to the residents of urban farming neighborhoods, to recognize them as the "experts" when it comes to the needs and desires of their neighborhoods, and ultimately, to contribute to an understanding of how to strengthen the relationship between urban farms and local communities. As such, the overarching goal of my research was to gain an in-depth understanding of community perceptions of urban farming as a use of vacant urban land in Baltimore and to elucidate the influences on these perceptions.

Specifically, my study aims were as follows:

Aim 1. To understand the processes used to gain community support for urban farming projects and city residents' responses to these efforts

Aim 2. To explore urban residents' perceptions of urban farming, particularly regarding the impact of urban farming on residential neighborhoods, as well as the influences on those perceptions

Aim 3. To examine how urban farming succeeds or fails in meeting the ideals of the local food movement by contributing to local food production that serves the common good and that is equitable and socially inclusive

1.2 Conceptual framework

The conceptual model that undergirds this study is based on parallel concepts from two different disciplines. The first is reciprocal determinism, a construct from Social Cognitive Theory that is commonly used in designing interventions for health behavior change. Reciprocal determinism was set forth by Albert Bandura in 1978 as the process driving Social Learning Theory, which he later re-conceptualized as Social Cognitive Theory (Bandura, 1978; Baranowski, Perry, & Parcel, 2002). Reciprocal determinism refers to the idea that behavior is determined by the interaction of individual cognitive factors such as knowledge and attitudes, social or physical factors that are external to a person, and behavioral factors such as self-efficacy or individual skill-level (see Figure 1). These three factors continually interact and influence one another; thus a change in one has implications for the others (Baranowski, et al., 2002).

A strikingly similar concept separately emerged in the early 1980's within the field of landscape perception. This body of research is concerned with individuals' and

groups' sensory experience with landscapes (both natural landscapes and those created or altered by humans), and is generally used to inform land management and planning decisions. Landscape perception became a popular area of study starting in the 1960s, triggered by legislation in the U.S. and the United Kingdom related to the management of scenic resources and the environmental impacts of development projects (Zube, Sell, & Taylor, 1982). A number of disciplines engaged with this topic early on, ranging from psychology to environmental studies, ultimately leading to a diffuse body of research that was not connected by an integrated theoretical structure. In the early 1980s, Zube and colleagues (1982) wrote a seminal publication proposing a theoretical framework for landscape perception that cut across the different disciplinary approaches to assessing perceived landscape values. They framed their review of the literature using a theoretical model in which landscape perception is determined by three components: humans, the landscape, and the interaction outcomes between these two components (see Figure 2). The human component encompasses "past experience, knowledge, expectations, and the socio-cultural context of individuals and groups," with specific focus on the features of humanity to which the landscape appeals. The landscape component includes physical and composition elements that are important to human interaction. The interaction between the human and landscape components result in interaction outcomes, or the products that emerge from the human-landscape perceptual interaction (e.g. stimulation, refuge, a sense of well-being). Just as in reciprocal determinism, the interaction outcome in turn affects the human and landscape components (Zube, et al., 1982).

Both of these models form a triadic, reciprocal structure that includes components related to human cognition, the external environment, and an experiential outcome

related to the particular behavior or landscape, all of which interact and influence one another. These parallels provide a relevant precedent for applying the concept of reciprocal determinism to this dissertation research, which does not assess specific behaviors (as Albert Bandura initially conceptualized the idea), but rather examines the formation of less tangible outcomes such as perceptions.

Figure 1. Bandura's model of reciprocal determinism

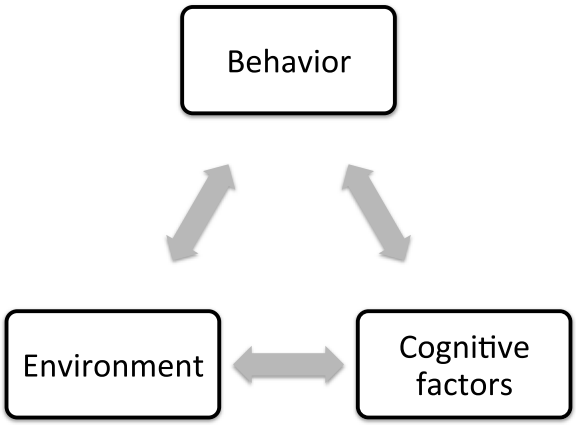
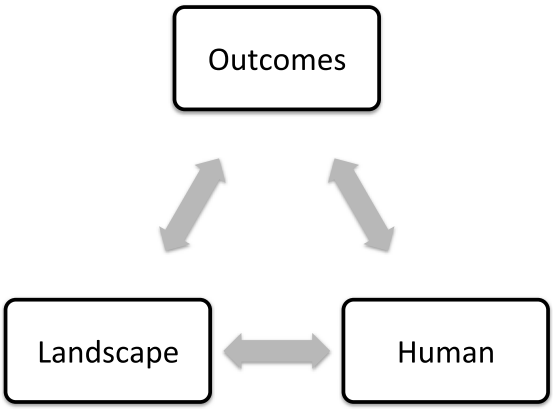
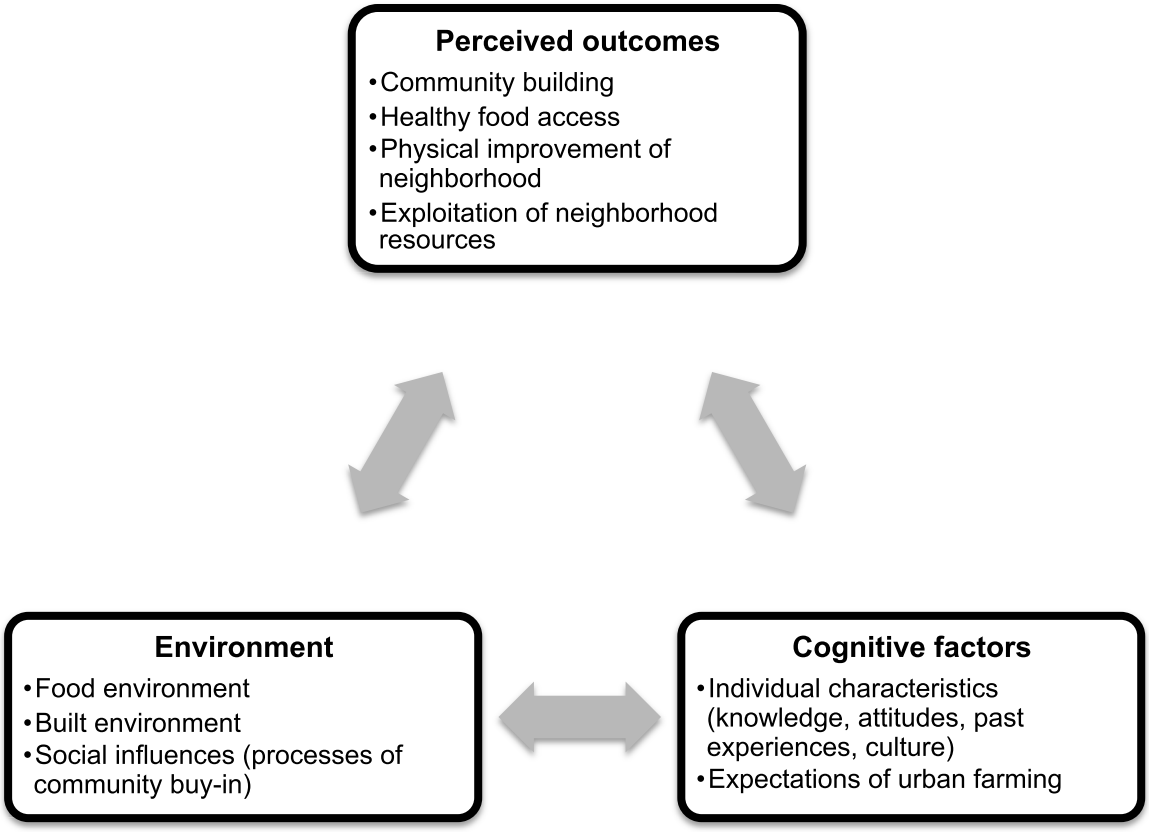


Figure 2. Zube et al.'s model of landscape perception



As illustrated in Figure 3, the conceptual framework for this research adopts a similar triadic, reciprocal relationship that includes human and environmental components that interact to produce perceived outcomes. The perceived outcomes in turn affect the human and environment components. Cognitive factors include individual characteristics that are related to perceptions of urban farming (e.g., knowledge, attitudes, past experiences, and culture) and that influence individuals' expectations for how urban farming will impact their neighborhoods. The environmental factors include aspects of the food environment (e.g., current access to fresh produce), the built environment (e.g., prevalence of abandoned properties and vacant lots), and social influences such as the processes of community buy-in that urban farmers use to gain support for their farming projects. Perceived outcomes include positive perceptions of urban farming and its impact on neighborhoods, such as its effectiveness at community building, increasing healthy food access, or physically improving a neighborhood, as well as negative perceptions such as the exploitation of neighborhood resources by outsiders.

Figure 3. Conceptual framework of community perceptions of urban farming



1.3 Organization of the dissertation

This research investigates the social context surrounding urban farming in Baltimore and the dynamics that color the relationship between urban farms, the individuals who farm the city, and residents who live in proximity to these farms. Following this introduction, Chapter 2 contextualizes this research within the broader sphere of urban agriculture by providing a history of urban agriculture in the U.S., differentiating between different types of urban agriculture, discussing its significance, and noting some of its limitations. In addition, Chapter 2 describes the setting in which the research was conducted. Chapter 3 describes the qualitative case study methodology employed for this research, including details related to site selection, the training of research assistants, data collection

procedures, and analytic techniques. Chapter 3 also considers issues of data quality and research ethics, and describes the dissemination of research findings.

Chapters 4 through 6 present original research exploring community perceptions of urban farming in Baltimore, Maryland. Manuscript 1 (Chapter 4) focuses on the concept of community buy-in, exploring perceptions related to the importance of community buy-in for urban farming, as well as the barriers, facilitators, and strategies for gaining such buy-in. Findings from this study demonstrate the range of strategies used to strengthen the relationship between urban farms and surrounding communities and highlight several general themes regarding effective processes for gaining community buy-in. Manuscript 2 (Chapter 5) discusses the perceived benefits of urban farming and how these relate to broader conceptual influences on neighborhood improvement. Through the development of an emic model, this study provides a framework for evaluating urban farming that accounts for its multifunctionality and provides a roadmap for developing a process of social and environmental accounting for urban farming. Manuscript 3 (Chapter 6) presents a theoretical assessment of urban farming, exploring how it aligns with the ideals of civic agriculture, the guiding principle behind the local food movement. Each manuscript is written as a stand-alone piece, with the intent of submitting each for publication in a peer-reviewed journal.

Chapter 7 ties together the main findings from each of the three studies comprising this research to make suggestions for future research and policy directions. This chapter also discusses the strengths and limitations of the research.

Chapter 2. Literature Review and Study Setting

This chapter provides a contextual basis for this research, placing it within the broader sphere of urban agriculture and describing the study setting. Although a wide body of research exists on urban agriculture, most studies either explicitly focus on urban gardening or do not distinguish urban farming from urban gardening; few have focused exclusively on urban farming. Therefore, this chapter reviews literature regarding urban agriculture in general.

2.1 The history of urban agriculture in the U.S.

In the U.S., agriculture is typically associated with the rural landscape, where large tracts of farmland can support large-scale production. However, cities have been important agricultural sites as early as the 1890s. Scholars in this area describe three main eras of food production in the U.S.: the early urban garden programs of the 1890s; the national garden campaigns associated with World War I and II; and the current greening movement that began in the 1970s.

According to Lawson (2005), urban agriculture started in the U.S. in the 1890s, a time when industrial expansion had led to substantial urban population growth, and with it, urban congestion. At the same time, a lack of industrial control created environmental problems that threatened the health of urban residents. Vacant-lot cultivation associations and improvement societies arose in response to these social and environmental conditions. Rooted in a philosophy of environmental determinism, urban gardens were expected to simultaneously improve the visual and sanitary conditions of cities as well as change garden participants' character, habits, and social behavior.

The first programmatic urban garden effort was pioneered in Detroit in 1894—a time of economic recession—as an alternative to charity for unemployed laborers. Mayor Pingree established the vacant-lot garden program aiming to help unemployed laborers grow food for their families and generate income through produce sales. Urban gardening strongly resonated with welfare reformers as it offered a self-help approach that provided access to food, kept people productive, taught new skills, and confirmed reformers' beliefs that most people on welfare were hard-working and did not want to be dependent on the state. The idea soon spread to other major cities. With the return of economic prosperity, however, the vacant land used for urban gardens became attractive to developers and vacant-lot cultivation associations disappeared (Lawson, 2005).

The next era of urban agriculture in the U.S. occurred during the first and second World Wars (1917-1945). Whereas the programs of the late 1800s targeted the poor, these later garden programs arose out of national crisis and sought support from the general public. They also involved a dramatic shift in organization, with the federal government providing much of the leadership and organizational capacity (Lawson, 2005). The *War Garden* movement was launched in 1917 with posters, cookbooks, manuals, and signs and stressed patriotic self-sacrifice; citizens were expected to voluntarily garden to promote domestic food production so that more farm-raised food could be sent overseas. Food shortages faced by the Allied forces were alleviated by U.S. food exports, an effort made possible in part by American civilian's reliance on their gardens for food (Mok et al., 2014). Families gardened in their yards and in community plots, and organizations like the Boy Scouts and Girl Scouts also grew gardens. In 1918,

there were over five million gardens in the U.S. producing $525 million worth of food (Lawson, 2005).

Government-supported *Relief Gardens* continued through the Great Depression of the 1930s. During World War II, the *Victory Garden* campaign emerged. Federal experts sought to increase food production through improved rural agriculture, and so instead of emphasizing food production, Victory Gardens were promoted as a way to improve health, provide a source of recreational family activity, and boost morale (Lawson, 2005). The War Food Administration ran propaganda linking gardening to patriotism and civic responsibility (Mok, et al., 2014). By 1944, there were nearly 20 million families with victory gardens that collectively provided 40% of the American vegetable supply (Lawson, 2005).

The current era of urban food production in the U.S. began as both "an expression of self-reliance" (Lawson, 2005, p. 205) and as a response to urban deterioration. The modern urban agriculture movement arose in the mid-1970s to counteract rising food prices due to gas shortages and amid concerns about environmental conditions, particularly growing awareness about the destructive impact of agricultural technologies on the environment. This was coupled with rising concerns about the health consequences of pesticides on food (Lawson, 2005).

Some activists also saw gardening as a form of community development that could transform vacant lots—a symbol of the failing conditions of many cities—into something useful. Following the collapse of the U.S. manufacturing sector in the 1950s, the loss of blue-collar employment, racial segregation policies, and the out-migration of the middle-class to the suburbs left many cities in physical disarray. The abandonment of

city centers left behind a concentration of poverty and communities that lacked political voice, leading to "depopulation and disinvestment [that] was manifested in the built environment, where neighborhoods… were pockmarked with abandoned buildings and vacant lots" (Birky & Strom, 2013, p. 4). Amidst these conditions, community gardens became a form of resistance to the deterioration of the city (Lawson, 2005). Gardening was a way for people to regain control over their lives and became an expression of grassroots activism. As Lawson (2005, p. 206) describes,

> *Faced with racial tension, a declining urban population, abandoned properties, and urban renewal projects that were tearing neighborhoods apart, local residents and activists sought to reclaim and rebuild communities and expand the open-space resources in their neighborhoods through gardening. Individuals could take personal steps to address inflation, the environment, and social anomie while also contributing to a neighborhood renaissance of sorts… The focus was on community – the community of gardeners who designed and maintained the garden, as well as the impact of the garden on the neighborhood, city, and larger society.*

This emphasis on community was accompanied by a similar shift in leadership of gardens. Instead of outside organizations such as civic groups developing the gardens and doling out plots, the community gardens of the 1970s relied on local community leadership. Gardeners and activists began to form citywide networks to promote community gardening such as Seattle's well-known P-Patch program. Municipalities faced financial strains in maintaining vacant land and so encouraged groups to take ownership for revitalizing derelict urban land into usable open space by developing adopt-a-lot programs and other incentives. The federal government also provided support for gardens in major cities through the U.S. Department of Agriculture (USDA) Cooperative Extension Urban Garden Program (Lawson, 2005).

Since the 1970s, urban agriculture projects have continued to evolve. Unlike the first two eras of urban agriculture—which as we have seen, were often temporary

responses to wars, food shortages, and economic depression—food insecurity is not the driving force behind the proliferation of today's urban agriculture projects. Gardens are created as more permanent features of the urban landscape, and a greater diversity of gardeners participate with a wider range of motivations driving their involvement (Birky & Strom, 2013). Recent years have seen growing concerns about nutrition and diet-related disease and the existence of food deserts, leading to an emphasis on increasing community food security through urban agriculture by providing access to fresh fruits and vegetables (Birky & Strom, 2013; Lawson, 2005). However, although modern urban gardeners may seek access to affordable fresh produce, many are motivated to work with neighbors, get exercise, contribute to neighborhood improvement, grow food organically, and eat locally (Birky & Strom, 2013). Urban agriculture is also seen as a potential entrepreneurial activity for communities with high unemployment, and various organizations have started job-training programs to provide individuals with relevant technical and marketing skills. In addition, new concerns about childhood obesity and diabetes have amplified interest in youth participation in gardening as an opportunity for food and nutrition education (Lawson, 2005). Finally, mainstream critiques of the industrial agriculture system (e.g., books like Michael Pollan's *Omnivore's Dilemma* and documentaries such as *Food Inc.*) have popularized alternative agrifood institutions and contributed to a broader ideological movement of environmentally and socially sustainable food choices (Mok, et al., 2014). In sum, while earlier generations of urban agriculture projects were expected to fade away as economic conditions improved and wars ended, today urban agriculture is increasingly seen as a solution to health,

environmental, and social issues and a more enduring feature of the city landscape (Birky & Strom, 2013).

In the past decade, urban agriculture has seen renewed political emphasis and legitimacy through the planting of the White House garden by First Lady Michelle Obama—the first vegetable garden at The White House since Eleanor Roosevelt's *Victory Garden* (Mok, et al., 2014)—as well as the publishing of her book, *American Grown: The Story of the White House Kitchen Garden and Gardens Across America,* which includes advice to parents, schools, cities and states on how to start gardens (Burros, 2012). Her *Let's Move* initiative, founded in 2010, also promotes healthy eating and gardening at home, school, and in the community, providing further momentum to the urban agriculture movement (Mok, et al., 2014). Further, the USDA started the *Know Your Farmer Know Your Food* initiative in 2009 "to support the critical connection between farmers and consumers and to strengthen USDA's support for local and regional food systems" (United States Department of Agriculture, 2013). In addition to these federal-level efforts, cities across the U.S. are creating more supportive local policies for urban agriculture. In Baltimore, the site of this study, Mayor Stephanie Rawlings-Blake has prioritized healthy food access and the production of locally grown food through the "Homegrown Baltimore" plan (Baltimore Office of Sustainability, 2013b), creating a policy environment in Baltimore that has helped to facilitate the expansion of urban agriculture.

2.2 Definition and types of urban agriculture

The Food and Agriculture Organization of the United Nations (FAO) defines urban agriculture as "small areas within cities, such as vacant lots, gardens, verges, balconies

and containers, that are used for growing crops and raising small livestock or milk cows for own-consumption or sale in neighborhood markets" (FAO, 1999). However, scholars have cautioned against simply thinking of urban agriculture as agricultural production that occurs in cities, particularly when determining research agendas and how best to promote urban agriculture (e.g., Crush, Hovorka, & Tevera, 2011). As de Zeeuw (2004) has noted:

> *It is not its urban location which distinguishes urban from rural agriculture, but the fact that it is embedded in and interacting with the urban system. Such linkages include the use of urban residents as labourers, use of typical urban resources (like organic waste as compost and urban water for irrigation), direct links with urban consumers, direct impacts on urban ecology (positive and negative), being part of the urban food system, competing for land with other urban functions, being influenced by urban policies and plans, etc.*

Thinking of urban agriculture simply as rural agriculture that occurs within city boundaries isolates it from the urban food system as a whole, leading researchers, advocates, and planners to overlook the unique constraints it faces and miss opportunities to connect it with other urban assets.

For this research, I focused specifically on horticulture and therefore will not discuss urban agriculture that primarily involves animal husbandry (e.g., aquaculture). Within horticulture, there are four common types of urban agriculture: urban farms, community gardens, institutional gardens (e.g., school or jail gardens) and home gardens. Table 1 provides a comparison of the defining characteristics of each.

Table 1. Defining characteristics of the types of horticultural urban agriculture projects

Types of Urban Agriculture	Physical space	Participants	Produce Use
Urban farms	Vacant lots or open public space (e.g., parks) Rooftops Vertical space	Paid employees Volunteers	Sales Donation
Community gardens	Vacant lots or open public space (e.g., parks)	Community members	Own consumption Donation
Institutional gardens (e.g., school gardens, jails)	Open institutional space (e.g., schoolyards)	Institutional participants (e.g., students, prisoners) Institutional employees (e.g., teachers)	Own consumption Donation
Home gardens	Private yard space Containers Rooftops	Household members	Own consumption

2.2.1 Models of urban farming

Urban farming—the focus of this research—is distinguished from other types of horticultural urban agriculture by its emphasis on income-generating agricultural activity; food is produced for commercial distribution rather than consumption by the grower. Farm produce and value-added products are often sold within the neighborhood (e.g., at a neighborhood farm stand) as well as in the broader community (e.g., at farmers' markets, restaurants, or institutions). Using the definitions proscribed by the Baltimore City Office of Sustainability (2013b), I categorize urban farms into two main models: community

farms and commercial farms. The distinction is based on how they interact with the surrounding neighborhood. Urban *community* farms are located on sites chosen based on their potential to positively influence the neighborhood, with a main component of their mission to engage and educate community members. They are frequently run as non-profits and often rely on volunteer support and grant funding. Urban *commercial* farms are generally started as entrepreneurial ventures and so are located on sites that are chosen for being most conducive to production farming. They tend to be run as for-profits and often support paid employees.

2.3 Significance of urban agriculture

As we have seen, the current era of urban agriculture differs from earlier generations in that a wider range of motivations drives participation. These motivations revolve around growing interest in environmentalism and urban sustainability, increasing concern about health and nutrition, and commitment to rebuilding declining neighborhoods (Birky & Strom, 2013). Reflecting this trend, urban agriculture is not viewed solely as a way of producing food. Rather, it is seen as a solution to a range of environmental, health, and social issues.

An extensive literature base describes a range of benefits associated with urban agriculture, including health, socio-cultural, economic, and environmental benefits (Table 2). The majority of this literature has focused on community gardening (Golden, 2013). Because some of the benefits associated with community gardening are due to the unique social processes that arise in these communal spaces or from participation in the act of gardening, some of the benefits reported in the literature may not be relevant to urban farming.

One weakness of this body of research is that few studies have attempted to quantify the impacts of urban agriculture. Most studies have been exploratory and have relied upon urban gardeners' self-reported benefits. Few studies have measured change before and after the implementation of an urban agriculture project, used a control group, or included a sample large enough to make inferences. Draper and Freeman (2010) note these limitations, calling for more rigorous, quantitative studies that solidify outcomes that have been explored qualitatively.

With these limitations in mind, the following sections provide a brief overview of the health, socio-cultural, economic, and environmental significance of urban agriculture. These benefits (and the supporting citations) are also summarized in Table 2.

Table 2. Benefits of urban agriculture reported in the research literature

Reported Benefits	Supporting Research
Health benefits	
Greater food access and security • Greater access to fresh, wholesome, organic, and/or culturally appropriate produce by gardeners • Greater access to fresh food within the larger community (e.g., via donations by gardeners) • Greater access to foods that are otherwise unaffordable or unavailable in supermarkets • Cost savings on groceries	(J. O. Allen, Alaimo, Elam, & Perry, 2008; Armstrong, 2000; Beckie & Bogdan, 2010; Blair, Giesecke, & Sherman, 1991; Corrigan, 2011; D'Abundo & Carden, 2008; Hale et al., 2011; D. B. Johnson & Smith, 2006; Kingsley, Townsend, & Henderson-Wilson, 2009; Kremer & DeLiberty, 2011; Patel, 1991; L. Saldivar-Tanaka & M. Krasny, 2004; Schmelzkopf, 1995; Wakefield, Yeudall, Taron, Reynolds, & Skinner, 2007)
Increased fruit and vegetable consumption • Greater fruit and vegetable consumption by gardening households • Increased preference for, consumption of, or	(Alaimo, Packnett, Miles, & Kruger, 2008; Blair, et al., 1991; Flanigan & Varma, 2006; Heim, Stang, & Ireland, 2009; Hermann et al., 2006; D. B. Johnson & Smith, 2006;

willingness to try fruits and vegetables by youth participating in gardening programs	Lautenschlager & Smith, 2007b; Lineberger & Zajicek, 2000; McAleese & Rankin, 2007; Morris, Neustadter, & Zidenberg-Cherr, 2001; Parmer, Salisburg-Glennon, Shannon, & Struempler, 2009; Twiss et al., 2003; Wakefield, et al., 2007)
Physical and mental health • Provision of a source of physical activity • Reduction in risk of dementia • Therapeutic benefits, such as stress reduction	(Armstrong, 2000; Fabrigoule et al., 1995; Hale, et al., 2011; Kingsley, et al., 2009; Patel, 1991; Poulsen et al., 2014; Simons, Simons, McCallum, & Friedlander, 2006; Wakefield, et al., 2007)
Psychological well-being • Cognitive stimulation • Source of pride and accomplishment • Provision of a connection to nature	(Armstrong, 2000; Austin, Johnston, & Morgan, 2006; Beckie & Bogdan, 2010; Hale, et al., 2011; Infantino, 2004; Kingsley, et al., 2009; Patel, 1991; Poulsen, Hulland, et al., 2014; Wakefield, et al., 2007)
Socio-cultural benefits	
Community cohesion and development • Provision of outdoor green space and opportunities for social interaction, strengthening social ties and facilitating new social connections • Provision of opportunities for neighborhood residents to interact who otherwise would not have such an impetus • Reduced social isolation for community gardeners • Perceived sense of safety/reduction in crime • Source of social capital • Increased community cohesion including increased pride in and attachment to one's neighborhood • Catalyst for community organizing and broader community improvement	(J. O. Allen, et al., 2008; Armstrong, 2000; Beckie & Bogdan, 2010; Glover, 2004; Gorham, Waliczek, Snelgrove, & Zajicek, 2009; Kingsley, et al., 2009; Lawson, 2007; Milligan, Gatrell, & Bingley, 2004; Poulsen, Hulland, et al., 2014; L. Saldivar-Tanaka & M. Krasny, 2004; Schmelzkopf, 1995; Shinew, Glover, & Parry, 2004; Teig et al., 2009; Wakefield, et al., 2007)

Cross-generational and cultural integration • Provision of opportunities to strengthen intergenerational relationships • Provision of opportunities for immigrants to develop ties with host and other ethnic communities, expand cultural competencies, and gain a sense of belonging • Provision of opportunities for expression and maintenance of cultural heritage	(J. O. Allen, et al., 2008; Andreatta, 2006; Beckie & Bogdan, 2010; Krasny & Doyle, 2002; L. Saldivar-Tanaka & M. Krasny, 2004)
Education and youth development • Provision of opportunities to learn about the provenance of food, agricultural processes, nutrition, ecology, and science • Provision of constructive activity for youth that promotes youth development	(J. O. Allen, et al., 2008; Fusco, 2001; Krasny & Doyle, 2002; Krasny & Tidball, 2009; Lautenschlager & Smith, 2007a; Travaline & Hunold, 2010)
Economic benefits	
Local economic development • Employment opportunities, particularly for low-income and socially excluded populations (e.g. formerly incarcerated individuals)	(Ferris, Norman, & Sempik, 2001)
Increased property values • Increased property values surrounding community gardens	(Voicu & Been, 2008)
Environmental benefits	
Local ecosystem services • Increased biodiversity, including provision of habitat for pollinators • Reduced air pollution through filtration of particulates by vegetation • Micro-climate regulation (e.g. reduction in the "urban heat island effect") through transpiration processes • Increased rainwater drainage, reducing the risk of flooding, ground water contamination,	(Andersson, Barthel, & Ahrne, 2007; Bolund & Hunhammar, 1999; Edmondson, Davies, Gaston, & Leake, 2014; Pearson, Pearson, & Pearson, 2010; Smit & Nasr, 1992)

and depleted groundwater levels • Recycling of organic waste (e.g. through composting) • Creation of healthier soil • Noise reduction (due to the soft character of unpaved ground)	
Climate change mitigation • Potential reduction in greenhouse gas emissions associated with food transportation • Carbon sequestration by crops • Reduced energy inputs associated with packaging, refrigerating, and marketing fresh produce	(Kulak, Graves, & Chatterton, 2013; Okvat & Zautra, 2011; Pirog, Pelt, Enshayan, & Cook, 2001)
Environmental education • Improved environmental attitudes • Provision of opportunities for environmental education and hands-on learning about ecological processes	(Hale, et al., 2011; Travaline & Hunold, 2010; Waliczek & Zacjicek, 1999)

2.3.1 Health benefits

The health benefits of urban agriculture manifest both through the food that is produced and through the act of gardening. Local food production can provide a direct source of fresh produce to individuals, households, and communities, thereby increasing healthy food access and potentially increasing consumption of fresh fruits and vegetables. The consumption of fruits and vegetables plays a protective role in the prevention of cancer, coronary heart disease, stroke, and several other conditions (Van Duyn & Pivonka, 2000). In addition, participation in gardening can improve individuals' physical and mental health and psychosocial well-being.

Food access and security

At the individual and household level, participation in urban gardening can provide greater access to fresh, wholesome, organic, and/or culturally appropriate food for gardeners, a benefit of particular value for low-income households. Individuals commonly cite a desire for better access to fresh produce as a key motivation for participating in community gardening (Armstrong, 2000; Beckie & Bogdan, 2010; Hale, et al., 2011; Patel, 1991; Wakefield, et al., 2007). For example, participants from a Baltimore community garden reported that the garden helped to improve household food security since they obtained most of the vegetables they and their families consume from the garden (Corrigan, 2011). In addition, in a study conducted among Latino gardens in New York City, participants reported that community gardening provided them with an opportunity to grow culturally-important foods that were unaffordable or unavailable in markets (L. Saldivar-Tanaka & M. Krasny, 2004).

Urban gardens can also provide a source of low-cost, nutritious food for communities threatened by food insecurity. For example, the USDA initiated an urban gardening program in 1977 to assist low-income urban residents in growing and preserving vegetables. Nearly 200,000 gardeners participated across 23 cities. The USDA estimated that for every dollar the program invested, gardeners grew an estimated $6 worth of food (Hynes & Howe, 2004). Furthermore, a spatial analysis of Philadelphia's foodshed demonstrated that over 50% of food-producing community gardens were found within the city's lowest income neighborhoods, suggesting that personal food production in community gardens may help fill the food security gap in these neighborhoods (Kremer & DeLiberty, 2011). Urban agriculture can also improve access to fresh fruits

and vegetables within the larger community. For example, studies have noted that gardeners often donate extra produce to soup kitchens and other charities (Corrigan, 2011; L. Saldivar-Tanaka & M. Krasny, 2004).

Despite its potential contributions, urban agriculture is certainly not a complete solution to urban food insecurity. The poorest residents of cities generally do not have the means to grow their own food; even when the necessary inputs (e.g., land, water, seeds) are subsidized, they may lack the time or physical ability to garden. A single mother working two jobs to support her family is unlikely to find time to weed and water on a regular basis. Similarly, the elderly or physically disabled may not have the physical ability to participate. A range of other structural barriers—including having the time, knowledge, and equipment to cook fresh produce—further constrain the ability of the most disadvantaged to participate in urban agriculture.

Fruit and vegetable consumption

Research has demonstrated that community gardeners eat significantly more vegetables than non-gardeners (Alaimo, et al., 2008; Blair, et al., 1991; Litt et al., 2011) and that individuals report eating more of these foods when they participate in gardening (Flanigan & Varma, 2006; D. B. Johnson & Smith, 2006; Twiss, et al., 2003; Wakefield, et al., 2007). What is not clear from these studies is the directionality of this relationship. Do individuals who choose to garden do so because they prefer eating fruits and vegetables, or does the act of gardening—and the access to fresh produce—motivate participants to eat more of these foods? Likely it is some combination of both. For example, some studies have shown that the desire to eat homegrown food is one motivator to gardening participation (Armstrong, 2000; Hale, et al., 2011; Wakefield, et

al., 2007), while others report increased preference for and consumption of fruit and vegetables by youth who participate in gardening programs, indicating the importance of exposure to such foods (Heim, et al., 2009; Hermann, et al., 2006; Lautenschlager & Smith, 2007a, 2007b; Lineberger & Zajicek, 2000; McAleese & Rankin, 2007; Parmer, et al., 2009).

Physical and mental health and psychological well-being

The act of gardening also contributes to improved physical and mental health and psychosocial well-being. Gardening participants report that gardening provides them with a source of physical activity (Armstrong, 2000; Hale, et al., 2011; Kingsley, et al., 2009; Patel, 1991; Poulsen, Hulland, et al., 2014; Wakefield, et al., 2007), activity that is strongly associated with better cardiovascular health (Caspersen, Bloemberg, Saris, Merritt, & Kromhout, 1991; Ekblom-Bak, Ekblom, Vikstrom, Faire, & Hellenius, 2014; Magnus, Matroos, & Strackee, 1979). Gardening participation is also associated with a reduced risk of dementia (Fabrigoule, et al., 1995; Simons, et al., 2006) as well as therapeutic benefits such as stress reduction (Hale, et al., 2011; Kingsley, et al., 2009; Wakefield, et al., 2007). In terms of psychological well-being, participants reported that gardening is a source of cognitive stimulation (e.g., a source of continuous learning) and that they gain a sense of pride and accomplishment from their gardening successes (Beckie & Bogdan, 2010; Infantino, 2004; Kingsley, et al., 2009; Patel, 1991).

The exposure to nature that comes with urban agriculture participation also appears to play an important role in cultivating gardeners' psychological well-being. Numerous studies reveal that participants value the connection to nature that comes with urban gardening (Armstrong, 2000; Beckie & Bogdan, 2010; Hale, et al., 2011; Kingsley,

et al., 2009; Patel, 1991; Poulsen, Hulland, et al., 2014; Wakefield, et al., 2007). Gardeners describe it as a retreat from the urban environment and a way to spend time outdoors, reconnecting with nature. A wide body of research has demonstrated the beneficial effects of nature on human well-being, including improved cognitive functioning (F. E. Kuo, 2001; F. E. Kuo & Taylor, 2004; Wells, 2000).

2.3.2 Socio-cultural benefits

As documented through an extensive literature base, urban agriculture has numerous positive impacts on the social fabric of communities. It serves as a catalyst for community cohesion and development, including providing opportunities for social integration across generations and cultures. In addition, urban agriculture provides important opportunities for education and youth development.

Community cohesion and development

Throughout the literature, it is clear that community gardens create space for gathering and socializing, strengthening existing ties and facilitating new connections. For some gardeners, the primary motivation to join a community garden is to connect with others (Kingsley, et al., 2009). Several studies describe gardens as bringing together diverse people who would not normally socialize (J. O. Allen, et al., 2008; Poulsen, Hulland, et al., 2014; Shinew, et al., 2004; Teig, et al., 2009). As a gardener participating in one study put it, "gardening is the leveler" (Teig, et al., 2009, p. 1119). Not only do gardens help to break down these invisible social barriers, they have also been shown to reduce social isolation among older people (Beckie & Bogdan, 2010; Milligan, et al., 2004) and give gardeners a sense of being a part of the broader community (Schmelzkopf, 1995).

By transforming vacant, often degraded, space into productive green space, urban agriculture frequently improves the built environment, reducing blight and beautifying neighborhoods. Such improvement can increase residents' perceived sense of safety (Gorham, et al., 2009) and create more pleasant outdoor space that encourages local community members to spend more time outdoors, with positive effects on social cohesion as social interaction occurs more frequently (L. Saldivar-Tanaka & M. Krasny, 2004; Schmelzkopf, 1995).

Drawing on Social Capital Theory, Glover (2004) explores how one community garden provided a source of social capital, connecting neighbors and leading to socializing that extended beyond the garden. A key component to the development of the social capital formed through community gardens appears to be the reciprocity that occurs between gardeners. Community gardeners talk about sharing advice, seeds, tools, and vegetables within the garden, a reciprocity that extends to aspects of life outside the garden (Teig, et al., 2009; Wakefield, et al., 2007).

The sense of pride gardeners feel from gardening is also seen throughout much of this literature, feelings that often extend to the wider community (Kingsley, et al., 2009; Poulsen, Hulland, et al., 2014; Wakefield, et al., 2007). In some cases, community gardens serve as a catalyst for community organizing and engagement in broader community improvement (Armstrong, 2000; Lawson, 2007; L. Saldivar-Tanaka & M. Krasny, 2004; Teig, et al., 2009; Wakefield, et al., 2007).

Cross-generational and cultural integration

Urban agriculture projects also enhance community cohesion by providing opportunities for cross-generational integration. Some gardening projects purposefully bring youth and

adults together to strengthen intergenerational relationships (Krasny & Doyle, 2002). Studies show that this also occurs spontaneously through neighborhood-based community gardens, through gardening participation by multiple generations within families, and through the close relationships that form between youth and adult facilitators of youth programs in community gardens (J. O. Allen, et al., 2008; Andreatta, 2006).

Studies also show that urban agriculture projects have unique benefits for immigrants. For example, Andreatta (2006) found that through participation with an urban community farm, Vietnamese immigrants were able to retain some of their culture, as well as share their farming practices and food preparation traditions with other community members. By having an opportunity to use their skills and knowledge in their new home, they felt they were able to make a positive contribution and become more visible to the larger community. Similarly, Beckie and Bogdan (2010) found that involvement in commercial urban agriculture created opportunities for senior immigrants to develop and strengthen ties with both host and ethnic communities, expand their cultural competency, and gain greater visibility within the community, ultimately creating a sense of acceptance and belonging.

Community gardens can also serve as cultural gathering places that facilitate the reaffirmation and maintenance of culture. For example, a study of Latino community gardens in New York City revealed these spaces as cultural and social neighborhood centers where people of all ages go to socialize (L. Saldivar-Tanaka & M. Krasny, 2004). They also served as sites for maintaining traditional farming culture in an urban environment.

Education and youth development

Another social benefit of urban agriculture projects is the opportunity they present for education. In "getting their hands dirty" and participating in food production, individuals involved in urban agriculture are reconnected to their source of food. In this way, urban agriculture has an important role to play in enhancing food citizenship—"by learning about their food—where, how, and by whom it is grown—people may be able to make more informed decisions about their food system" (Travaline & Hunold, 2010, p. 584). Yet it is also possible that the mere presence of food production in cities could stimulate interest in agricultural processes and raise awareness of issues related to agriculture and food (Travaline & Hunold, 2010).

Including youth in gardening activities is believed by some to be essential to forming healthy nutritional habits that will transfer into adulthood (Lautenschlager & Smith, 2007a). Studies demonstrate that youth gardening programs provide youth with opportunities to learn not just about gardening, but also about the provenance of food, nutrition, ecology, and scientific principles, and to try eating new fruits and vegetables (J. O. Allen, et al., 2008; Fusco, 2001; Krasny & Doyle, 2002; Krasny & Tidball, 2009). In addition, such programs are viewed as providing youth with a constructive activity that can keep them out of trouble, particularly during the summer when they have few recreational opportunities (J. O. Allen, et al., 2008; Krasny & Tidball, 2009). Furthermore, studies have found that youth gain important life skills through garden participation such as responsibility, hard work, and delayed gratification, and that it gives youth a way to positively contribute to the community (J. O. Allen, et al., 2008; Krasny & Doyle, 2002).

2.3.3 Economic benefits

A smaller subset of studies demonstrates that urban agriculture has the potential to yield economic benefits such as job opportunities and the improvement of property values.

Job creation

With increasing demand for local food comes greater opportunity to sell the food grown through urban agriculture (e.g., at farmers' markets or to local restaurants), thereby increasing associated job opportunities. Anecdotes of urban farms that provide living wages to employees are documented in the literature (e.g., Ferris, et al., 2001) and feasibility studies have reported significant potential for urban farms to be profitable in some settings (Global Green USA, 2012).

Increased property values

An additional economic benefit is increased property values. Evidence for this comes from a study conducted in New York City, which demonstrated the positive impact on the sales price of properties within four blocks of a community garden, an impact that was greatest in disadvantaged neighborhoods (Voicu & Been, 2008). Though research on this topic is limited, the media further demonstrates how the popularity of "food culture" can influence real estate values:

> *[F]or house buyers, these community gardens simply have aesthetic appeal, contributing to a kind of rustic, down-home vibe that makes nearby real estate more attractive. And it hasn't taken long for real-estate agents and developers to take advantage of that commercial potential. "It's not uncommon for real-estate agents to stage veggie beds in the back yard," Edwards [a real estate agent] told me. … "It's a life style that buyers buy into," Edwards said. "The life style of growing food. Which they may or may not do, but they're buying into that food culture." (Markham, 2014)*

The hipness of community gardens and urban farms can also be seen as a drawback, however, potentially contributing to the gentrification of low-income neighborhoods:

> *Many community gardens are started with the intention of supporting lower-income communities, Tiny Gray Garcia, an activist and journalist, said. But once they are built, she added, "the real-estate companies come in and start to reassess the land and use the property value to displace poor people of color. The community-gardening people may be well meaning, but they don't always understand that they're pawns in the game." (Markham, 2014)*

2.3.4 Environmental benefits

Urban agriculture has the potential to provide a range of benefits to the natural environment, including "ecosystem services" at local and global levels. Ecosystem services are defined as "the benefits human populations derive, directly or indirectly, from ecosystem functions" (Costanza et al., 1997). These include direct services such as air filtration, as well as indirect services such as the pollination of plants. Ecosystem services can be further classified as local or global, depending on the scope of the problem they are connected to and the possibility of transferring the service from where it is produced to the location where humans benefit from it (Bolund & Hunhammar, 1999). In addition, urban agriculture projects provide educational opportunities that can expand awareness of environmental issues and encourage environmental stewardship.

Local ecosystem services

Urban agriculture has been shown to generate several local, direct ecosystem services. These include the filtration of pollution and particulates from the air, micro-climate regulation, noise reduction, rainwater drainage, and waste recycling (Bolund & Hunhammar, 1999; Pearson, et al., 2010; Smit & Nasr, 1992). Indirect services include increased biodiversity through the creation of habitat for wildlife, and in particular,

important pollinators such as bees (Andersson, et al., 2007), as well as the creation of healthier soil (Edmondson, et al., 2014). The degree to which urban agriculture contributes to these services depends in part on what it replaces, as some natural urban ecosystems are more beneficial than others. For example, the air filtration capacity of trees is higher than other types of vegetation (Bolund & Hunhammar, 1999), so a forested park may be more beneficial than an urban farm. Furthermore, urban farms often grow crops in hoop houses, potentially negating many of the ecosystems services associated with urban agriculture that occurs outdoors.

Climate change mitigation

Regarding its contribution to global ecosystem services, researchers continue to debate the degree to which urban agriculture contributes to climate change mitigation. Proponents argue that reducing the number of miles that food must travel will decrease greenhouse gas (GHG) emissions associated with transportation. Pirog and colleagues (2001) provide evidence for this conclusion by comparing the amount of fuel and associated carbon dioxide emissions used by the conventional food system with Iowa-based regional and local food systems. They found that the conventional system used 4-17 times more fuel and released 5-17 times more carbon dioxide than the regional and local systems to transport fresh produce to Iowa consumers, depending on the system and truck type.

Assessing the impact of food transportation on greenhouse gas emissions is fraught with complexity, however, as it must take into account a range of uncertainties. For example, it is inaccurate to attribute the entire transportation emission cost to food commodities if they are shipped with other cargo (Mok, et al., 2014). Economies of scale

must also be considered. An apple from a truck that has transported 2,000 apples over 2,0000 km will have consumed the same amount of fuel as an apple delivered in a bin of 50 apples to a farmers' market 50 km from the orchard (Mok, et al., 2014). Glaeser (2011) also points to the environmental cost of devoting additional metropolitan space to agriculture, resulting in lower population density and more driving (and thus more carbon emissions). Furthermore, in instances where additional energy and fertilizer inputs are required for plant growth in unfavorable conditions (e.g. crops crown in heated greenhouses), urban agriculture can lead to a net increase in emissions (Mok, et al., 2014).

These considerations point to a need for more comprehensive analyses of the total emissions of a food system, which is far from a simple endeavor. One such life cycle assessment conducted in the U.K. found that, with the exception of strawberries grown in hoop houses, the production and distribution of crops by an urban farm resulted in lower GHG emissions than the conventional food supply system (Kulak, et al., 2013). The study authors conclude that urban agriculture can maximize its GHG emission reductions through crop choice—i.e., selecting crops that provide the highest yields in local conditions and that would otherwise be produced in energy-intensive greenhouses or air-freighted in. Another revealed that food miles account for just 4% of the greenhouse gas emissions of the U.S.'s food system, suggesting that consuming local food has a negligible impact on climate change mitigation (C. L. Weber & Matthews, 2008).

A second promising pathway to climate change mitigation is through carbon sequestration. Plants take in carbon dioxide, separate the oxygen and carbon molecules, and then release oxygen back into the air and capture the carbon in the soil, thereby

reducing atmospheric carbon (Okvat & Zautra, 2011). One estimate of carbon sequestration by a 0.4-acre, organic, communal garden showed that the garden had captured 19 tons of carbon from the atmosphere over ten years (Meadows, 2000), translating to about three years of an average American's emissions (Mok, et al., 2014).

Urban agriculture can yield further climate change benefits through its contribution to the local ecosystem services described above. For example, recycling food scraps and yard waste through composting diverts such waste from landfills, eliminating the GHG emissions that would otherwise result. Furthermore, aside from reducing food miles, food that is locally produced and marketed can alleviate the need for packaging, refrigeration, and the energy inputs required by grocery stores (i.e., cooling, heating, lighting) (Okvat & Zautra, 2011).

The sum of this data indicate that urban agriculture can contribute to climate change mitigation if it is practiced in such a way as to minimize GHG emissions (e.g., selling produce in the immediate vicinity of the farm rather than transporting it), though the total reduction in emissions may be negligible when considering the full impact of the food system on climate change.

Environmental education

Finally, by reconnecting people to natural systems, urban agriculture can help expand environmental awareness and stewardship (Okvat & Zautra, 2011). For example, studies have demonstrated that participation in community gardening provides an opportunity for ecological learning (Hale, et al., 2011) and can enhance ecological citizenship (Travaline & Hunold, 2010). Additionally, participation in a school gardening program led to

significantly more positive environmental attitudes among elementary and junior high school students (Waliczek & Zacjicek, 1999).

2.4 Urban agriculture and the production of "alternative food"

Agriculture in the U.S. has drastically shifted over the past 60 years, with the prevalence of small-scale and family farms declining, replaced by large, industrial-like operations. These operations form the production basis of the industrial food system, which emphasizes production and efficiency as its primary goals (Lyson & Guptill, 2004). Cheap and plentiful food has resulted, as has environmental degradation, poor nutrition, food-safety scares, a loss of family farms, and the distancing of people from food practices and knowledge (P. Allen, 2010).

Driven by concerns over environmental, social, and health costs of the industrial food system, over the past three decades food activism in the U.S. has focused on developing a counter-movement in the form of local food systems (Guthman, 2008a). The local food movement is guided by the principle of "civic agriculture," an approach to agriculture and food production that is tightly linked to a community's social and economic development (Lyson, 2005). The "alternative agrifood institutions" that characterize the local food movement are designed to support small- and mid-scale farming while making fresh, local foods available to consumers, and to educate people of the value of local, sustainably grown, and seasonal food (DeLind & Bingen, 2008; Guthman, 2011). Common forms include direct-marketing schemes such as farmers' markets and community supported agriculture (CSA), urban agriculture, and small-scale organic farms. Through these locally-based institutions, "alternative food" is produced and marketed.

Urban agriculture encapsulates many of the ideals of civic agriculture and the local food movement. As defined by Lyson (2005), civic agriculture operations are characterized by their concern with the production of quality products over yield and cost; their small scale, which is generally labor intensive; their reliance on site-specific knowledge and a problem-solving perspective, rather than standardized practices; and their orientation toward local market outlets. Each of these characteristics applies to the vast majority of urban farms and gardens. First, in terms of the products grown through urban agriculture, quality is a primary consideration for participants. One of the main drivers for urban garden participation is to grow healthy fresh food (Birky & Strom, 2013), and gardeners often extoll their harvests as better tasting and more wholesome than supermarket produce (Armstrong, 2000; Hale, et al., 2011). In terms of urban farming, municipalities like Baltimore are creating standards that ensure that produce from urban farms is grown without the use of chemical inputs (i.e., chemical fertilizers and pesticides) so as minimize health and environmental risks (Baltimore City Department of Planning and Department of Housing and Community Development, 2013). Second, urban farms and gardens are small in size—even the largest urban farms are small compared to industrial farm operations—and they rely primarily on manual labor. Third, because of their small-scale, dispersed nature, and diverse management, urban agriculture projects require site-specific decision-making, although this may change with the emergence of large hoop farms. Fourth, the produce grown through urban agriculture is either consumed by the participants or directly marketed through local farm stands, farmers markets, CSA programs, local restaurants, and local institutions. Finally, a key aspect of civic agriculture is the emphasis of direct citizen

participation in the food system (Chung, Kirkby, Kendell, & Beckwith, 2005). By their very nature, community gardens enhance such participation. Many urban farms also emphasize community participation, as is demonstrated through this dissertation research.

2.5 Constraints to urban agriculture

As demonstrated above, much of the literature on urban agriculture focuses on the myriad ways it benefits communities. While there are many reasons for such optimism, overstating the capacity of urban agriculture to solve health, social, economic, and environmental problems can lead to disappointed growers and communities, dissatisfied funders, disenchanted policy-makers, and potential backlash against urban agricultural efforts when they fail to meet expectations. The research literature on urban agriculture in the developing world has been critiqued for being overly driven by an advocacy objective (Battersby, 2013; Ellis & Sumberg, 1998; Webb, 2011; Zezza & Tasciotti, 2010), calling into question the soundness of the conclusions. For example, Webb noted that many studies from South Africa had found urban agriculture was not as productive or important as might be expected, but that "studies based on insubstantial or unconvincing data continue to present a largely positive conception of the practice" (2011, p. 203). It is quite possible that the same could be true of research conducted in high-income settings. Therefore, it is important to take a more balanced perspective and acknowledge the constraints to urban agriculture in addition to the benefits. In this section, I discuss issues that constrain urban agricultural projects, including land access and other inputs, competition with rural agriculture, urban sprawl, and negative perceptions of urban agriculture.

2.5.1 Land access

A continual threat to urban agriculture is limited access to land. This encapsulates several interrelated issues: availability of land, competition by other land uses, and land tenure. While creative ways of growing food in densely populated areas have emerged such as rooftop and vertical gardening, cities with ample vacant land have the most potential for urban agriculture. Yet even when vacant land is available, it may not be conducive to agricultural uses; for example, a plot may be too small, too sloped, or may not receive enough sunlight. There might also be competition from other land uses. Municipalities generally favor development projects that bring economic gain to the city over urban agriculture projects. Even if vacant land has little development potential, community residents may prefer other uses such as parks or sports fields that are more oriented toward cultural functions (Lovell, 2010).

Once a garden or farm is established, hold on that land is tenuous. Despite the "sweat equity" invested, if urban agriculture projects are not located on privately-owned property or part of a land trust, city governments can generally revoke land rights if a more lucrative development opportunity arises (Kaufman & Bailkey, 2000). While land tenure is a critical issue for any type of urban agriculture, it affects urban farmers most profoundly, as they must make improvements to the land or infrastructure investments in order to produce food on a larger scale. Growers are understandably reluctant to make long-term investments in a site (such as soil improvements or irrigation systems) without having a multi-year lease on the land. Securing a loan for start-up costs is also nearly impossible without long-term land security (Baltimore Office of Sustainability, 2013b).

2.5.2 Other inputs

Land is not the only resource needed for successful urban agriculture. Urban farmers need additional inputs, including a reliable source of water to irrigate crops and fertile, uncontaminated soil. While it is possible to access water by tapping into existing water meter pits in some urban areas, in other areas farmers may have to install expensive irrigation systems, an investment that makes little sense without a guarantee of future land tenure. In regard to soil, urban soils are often heavily compacted, requiring heavy equipment to till it. Furthermore, past industrial uses of city land leave behind toxic contaminants. Such contamination calls into question both the safety of eating food grown in cities and cultivators' risk of exposure to contaminants through contact with the soil (B. F. Kim et al., 2014). The process of remediating and enriching the soil can take years and city regulations around waste management can constrain farmers' ability to make their own compost—a critical input for developing rich, fertile soil.

2.5.3 Competition with rural agriculture

Another consideration is the effect urban farms may have on rural agriculture and farmland. To date, rural farmers have not been concerned with urban agriculture as a competitor, for its contribution to the food supply is too small to affect demand for rural agricultural products (personal communication, K. Clancy, April 19, 2012). Some researchers argue that urban agriculture complements, rather than competes with, rural agriculture, as it offers a source of perishable products in close proximity to consumers (Lovell, 2010). Urban agriculture will never replace the need for rural farming, as its scope is inherently constrained by city boundaries, and it cannot achieve the same economies of scale as rural farming. The small plots generally available for urban

agriculture are most conducive to fruit and vegetable production, which cannot meet people's complete food needs (P. Allen, 1999). Even urban agriculture's contribution of fruits and vegetables could not substitute the need for rural agriculture as the annual global vegetable harvest alone covers an area roughly equivalent to the space occupied by cities globally (Hamilton et al., 2014). That said, recent studies have demonstrated urban agriculture's potential to significantly contribute to cities' vegetable needs (McClintock, Cooper, & Khandeshi, 2013).

Considering the minor role that urban agriculture plays in global food production, it is worth questioning the logic in investing resources in urban agriculture when rural farming—which we depend upon for most of our food supply—faces so many issues: farmers who struggle to make a living through farming, an aging population of farmers who are not being replaced by their children, the disappearance of mid-sized farms, and prime farmland being swallowed up by suburban developments. From the context of the developing world, Ellis and Sumberg (1998, p. 221) argue against such investment, stating, "the best that governments or municipal authorities can do is take a permissive and enabling role toward such projects, not to invoke new demands on scarce public resources nor new pressures on scarce administrative capacity." The resource context in the U.S. and other high-income countries is obviously far less limited, but nonetheless, we must be cautious about overstating the importance of urban agriculture to global food production.

That said, urban agriculture has the potential to contribute to some of the challenges facing rural agriculture by breeding future rural farmers. Participation in urban agriculture may pique individuals' interest in growing food at a larger scale, and urban

farms can act as training grounds for larger-scale food production. For example, educational farms such as Baltimore's Real Food Farm have internship programs for high school students and house Americorps volunteers, thus providing training opportunities for city residents to gain skills in production agriculture.

2.5.4 Urban sprawl

A related issue is the possibility that cities might encroach into rural land when tracts of open space are retained within the city boundaries for producing food (Lovell, 2010). Similarly, some warn that urban farming could turn dense urban environments into the characteristic sprawl of peri-urban areas, particularly as some very large urban farms (on the order of 20-plus acres) have popped up in cities such as Albuquerque and San Diego (C. Weber, 2012). This could dilute the density that defines the city landscape by locking in the use of these large tracts of land as green space, rather than encouraging the development of the inner core of the city. With decreased density, driving increases, resulting in greater GGH emissions, offsetting any potential gains associated with reduced food transportation (Glaeser, 2011). In contrast, when people live in dense concentrations, environmentally beneficial opportunities become feasible, such as public transportation (Bolund & Hunhammar, 1999).

The counter-argument is that urban farms and gardens are likely to be replaced by development as economic conditions improve and land becomes more valuable. As we have seen, economic conditions have historically been the driving force behind urban agriculture, with community gardens and other projects springing up in times of economic depression and disappearing once conditions improve. This laissez-faire attitude is also problematic, as it dismisses not just the sweat equity of urban growers, but

also the unique benefits that urban agriculture brings to cities, and ultimately discourages long-term investments in infrastructure and soil that allows urban agriculture projects to thrive.

2.5.5 Negative perceptions of urban agriculture

A final constraint involves unfavorable perceptions of urban agriculture as a valuable use of vacant land. This can come from government officials, leading to a lack of municipal support for urban farms, or from residents, leading to a lack of community and economic support. People may have concerns about the safety of food grown on lots that were once filled with trash, or perceive agriculture as a rural activity, and thus see urban agriculture as an inappropriate use of city land (Kaufman & Bailkey, 2000).

Kaufman and Bailkey (2000, p. 62) also note a perception that occurs specifically among African Americans, who "see in urban farming echoes of the slavery and sharecropping left behind in the migration of Southern blacks to Northern cities." African Americans have a unique agricultural cultural history that includes agronomic traditions brought from Africa, the experience of slavery, sharecropping and tenant farming, gardening traditions carried during the Great Migration to the industrial North, and contemporary concerns about food system issues (Jordan, Pennick, Hill, & Zabawa, 2007). Recent black activism reflects a conflict between the injustices served upon blacks and the freedom and sense of belonging that comes with land ownership. In 1968, Eldridge Cleaver – a member of the Black Panther Party – pointed out this very contradiction, stating that as slaves, "black people learned to hate the land. From sunup to sundown, the slaves worked the land, sowing and reaping crops for somebody else, for profit they themselves would never see or taste." Yet at the same time, some blacks feel

"a deep land hunger" or the desire to own land of their own (Smith, 2004). This dialogue continues, with African American farmers citing the association of agriculture with slavery, sharecropping, and tenant farming as the reason for the lack of young black farmers today.

2.6 Study setting

This research was conducted in Baltimore, Maryland, which was once the sixth largest city in the U.S. and an important manufacturing and shipping hub (Service Employees International Union, 2004). Today, with a population of about 620,000, it remains the largest city in Maryland, but is now around the 20th largest metropolitan area in the country (U.S. Census Bureau, 2012).

Characterizations of Baltimore often emphasize the relative poverty of the city. Compared to the state of Maryland, Baltimore's population is quite poor; the median income from 2006-2010 in Baltimore was about $40,000 while the median income in Maryland was roughly $70,000, and 21.3% of Baltimore's population was living below the poverty level in 2010 (compared with 14.3% nationwide and 8.6% in Maryland). Not surprisingly, education levels are lower too: 77.4% of adults have graduated from high school in Baltimore compared to 87.8% in Maryland (U.S. Census Bureau, 2012).

Baltimore also fares worse than the state of Maryland on almost every major health indicator. In fact, a 2014 national report ranked Baltimore City as the least healthy county in the state of Maryland (County Health Ranks & Roadmap, 2014). There are significant disparities in health between groups within Baltimore, with blacks, men, and individuals with low educational levels generally fairing worse than their counterparts. For example, 13.6% of Baltimore residents and 16.3% of black residents had been

diagnosed with diabetes by 2008, and the 2008 disparity ratio in diabetes was 1.85 comparing blacks to whites, 1.54 comparing men to women, and 3.93 comparing those with lower education to those with higher education. Furthermore, 33.8% of Baltimore residents and 42.3% of black residents were considered obese in 2008; the disparity ratio between blacks and whites was 2.03 (Baltimore City Health Department, 2010).

The high rates of obesity in Baltimore are an interesting juxtaposition with statistics related to the difficulty residents face in accessing food. As discussed later in this chapter, 20% of Baltimore residents live in a food desert, including 25% of blacks and 7% of whites (Baltimore City Department of Planning, 2012). In addition, in 2008, 23.3% of Baltimore residents and 29.6% of black residents had experienced food insecurity (defined as "concerned about having enough food") within the last 30 days (Baltimore City Health Department, 2010). Though many Baltimore residents consume an excessive number of calories, leading to obesity and chronic disease, there are clearly major constraints for many residents in accessing healthy foods.

2.6.1 The history of vacant land in Baltimore

Baltimore has drastically changed as a city in the past half-century. In the 1950's, its thriving manufacturing and shipping industries created enough jobs to swell the city to nearly one million people (Service Employees International Union, 2004). The most economically important industry was steel, with the Bethlehem steel mill alone employing 35,000 workers in 1959 and paying workers sufficient wages to live a middle-class lifestyle. The decades that followed, however, saw a nationwide decline in the manufacturing sector, and Baltimore lost over 100,000 manufacturing jobs between 1950 and 1995 (Service Employees International Union, 2004). Many cities within the Rust

Belt, including Baltimore, saw rapid population decline with these job losses. In addition, post-World War II suburbanization trends led to a mass exodus of residents from many U.S. cities. This trend was supported by federal policies that subsidized middle-class (mostly white) out-migration and was also driven by redlining practices that contributed to racial segregation and neighborhood decline (Accordino & Johnson, 2000; Cohen, 2001). In Baltimore, this out-migration rapidly increased with the racially driven "white flight" that followed the 1968 race riots (Service Employees International Union, 2004). Businesses fled the city, followed by workers, and by 2010 Baltimore had lost a third of its population, dropping from a peak of about 950,000 people in 1950 to the current population of about 620,000 (Gibson, 1998; U.S. Census Bureau, 2012).

With this out-migration came lower demand for homes and declining revenue for landlords. As described by Cohen (2001, p. 417), decreased demand for housing leads "to a dynamic in which many landlords refrain from making nonessential repairs, fall behind or default on their mortgage payments, and stop paying property taxes. The result is often foreclosure or abandonment, the continued deterioration of the property and negative impacts on the neighborhood." Out-migration also leads to decreased tax revenue, limiting a city government's ability to invest in public improvements and maintenance, and a loss of business investment in the affected neighborhoods. This is precisely what happened in Baltimore, which is among the four U.S. cities that have experienced the largest absolute population losses since 1950 (Cohen, 2001). Baltimore has about 33,000 vacant properties, including 16,000 vacant buildings and 17,000 vacant lots; 4,000 of these lots are titled to the Mayor's office (Baltimore Office of Sustainability, 2012; Housing Authority of Baltimore City, 2012; Open Baltimore, 2014).

The inevitable result of Baltimore's drastic decline in population, these vacancies impose significant costs on the city and its neighborhoods. Vacant properties in general are considered eyesores that contribute to neighborhood decay and attract crime, vagrancy, and rodent infestation (Cohen, 2001). They also lower property values, making resale difficult and decreasing property tax revenues for the city (Accordino & Johnson, 2000). Reducing the blight caused by vacancies has become a priority for Baltimore City and Mayor Stephanie Rawlings-Blake. Transforming vacant lots "from liabilities to assets" is one of the goals of Baltimore's Sustainability Plan (Baltimore Office of Sustainability, 2009), and in 2010, the Mayor announced her Vacants to Value initiative to "reduce vacant housing and urban blight in Baltimore" (Baltimore City Mayor's Office, 2010).

While much of the focus of the Mayor's initiative is to increase investment in Baltimore and to encourage families to move into the unused housing stock, some buildings are unsuitable for rehabilitation and must be demolished. Thus, one of the strategies of the Vacants to Value initiative is to conduct targeted demolition of unsafe properties (Baltimore City Mayor's Office, 2010). With new demolition of abandoned buildings adding to existing vacant lots, there is a greater stock of land than there is demand. This has led the city to consider other productive uses of vacant lots, such as avenues to green the city and increase local food production through urban agriculture. Baltimore's Sustainability Plan supports both of these goals in its proposal that a land trust be established to help communities protect vacant lots that they have rehabilitated, and by recommending an increase in the number of farms and gardens in vacant lots (Baltimore Office of Sustainability, 2009). Given the benefits associated with green space

in urban areas and the potential contribution of vacant-lot farms and gardens to the local food system, Baltimore's abundant vacant land can be viewed as a unique opportunity for improving the health of Baltimore's communities.

2.6.2 Baltimore's food deserts

Another common repercussion of the population decline that occurred in many post-industrial cities was the loss of grocery stores as these businesses followed their more affluent customers who were emigrating from the city to the suburbs (Walker, Keane, & Burke, 2010). Urban areas were rapidly dominated by low-income minorities, making them financially untenable for businesses, while the suburbs offered larger sites, fewer zoning restrictions, and customers with high purchasing power (Guthman, 2008a). In Baltimore, many white-owned stores also closed after being looted and burned during the 1968 riots (Yockel, 2007).

In many poor, inner-city neighborhoods, grocery stores closed, leaving these areas with few options for purchasing a wide variety of affordable foods. Since the 1990s, such neighborhoods have come to be known as "food deserts" (Furey, Strugnell, & McIlveen, 2001). A food desert is an area characterized by poor access to healthy and affordable food through lack of physical ability and/or financial means (Mok, et al., 2014). The Center for a Livable Future and the Baltimore City Office of Sustainability have worked together to create a definition of a food desert that captures the neighborhood characteristics that constrain access to healthy foods in Baltimore. They define a food desert as "an area where the distance to a supermarket is more than ¼ mile, the median household income is at or below 185% of the Federal Poverty Level, over 40% of households have no vehicle available, and the average Healthy Food Availability Index

score for supermarkets, convenience and corner stores is low (measured using the Nutrition Environment Measurement Survey)" (Baltimore City Department of Planning, 2012). Based on the 2012 Baltimore City Food Desert Map, 20% of Baltimore residents live in a food desert, including 25% of Baltimore's African American population and 7% of its white population (Baltimore City Department of Planning, 2012). This confirms other studies that have found that access to healthy foods—particularly fruits and vegetables—is low in Baltimore's low-income neighborhoods (Franco, Nandi, Glass, & Diez-Roux, 2007; Gittelsohn et al., 2007) and that black and lower-income neighborhoods have lower availability of healthy foods than do white and higher-income neighborhoods (Franco, Roux, Glass, Caballero, & Brancati, 2008; Morland, Wing, Roux, & Poole, 2002).

The contribution of an unhealthy diet—in the form of low fruit and vegetable intake and high sugar and fat intake—to poor health outcomes such as obesity, diabetes, and cardiovascular disease is well known. While research has not shown a clear relationship between the availability of healthy foods in a neighborhood and eating a healthy diet, changing the food environment to ensure that people have access to healthy foods remains a priority for addressing the obesity epidemic (Khan et al., 2009). Supply of healthy foods is only one-half of the equation in getting people to consume healthier diets, but "the choices people make about what to eat are limited by the food available to them" (Morland, et al., 2002). Increasing healthy food access in food desert neighborhoods is also an issue of equity that is worthy of action regardless of the expected health outcomes.

Baltimore has taken up the challenge of addressing its unhealthy food environment, establishing the Baltimore Food Policy Initiative, a food policy program that brought together government, non-profit, and private sector leaders in a collaborative infrastructure to understand and address inequity in healthy food access. Efforts of the program include hiring one of the country's first food-policy directors and creating a food policy task force. In this way, the city has positioned itself as a leader in food policy and a model for other U.S. cities (Santo, Yong, & Palmer, 2014).

2.6.3 Urban agriculture in Baltimore

In Baltimore, support for urban farming stems from these concerns about an overabundance of vacant properties and a lack of access to healthy foods in many low-income neighborhoods, as well as high unemployment rates, three interrelated problems that urban farms are seen as addressing. Community gardens have long been part of Baltimore's landscape, but since 2010, 15 urban farming projects have popped up around the city through the efforts of individual entrepreneurs, non-profit organizations, and businesses, reflecting the grassroots excitement that exists in Baltimore around local food production.

The municipal government, through the City's Office of Sustainability, increasingly supports urban gardening and farming. This is evident by recent changes to Baltimore City's zoning code to allow for agricultural uses and on-site composting, a new program that provides water access for irrigation, an update to the building code that removes barriers to constructing hoop houses, updated regulations that facilitate animal keeping, and the development of the City's first urban agriculture plan (Baltimore Office of Sustainability, 2013b). One of the most innovative programs that the city has

undertaken is its Urban Agriculture Land Leasing Initiative, which began in the spring of 2011. Under this initiative, the Office of Sustainability leases vacant city-owned lots to individuals and organizations for five-year terms in order to establish urban farms. The aims of the initiative are to establish high-quality urban agriculture sites that use sustainable farming practices, increase access to healthy, affordable food, particularly within food deserts, and improve environmental conditions on and around vacant and/or abandoned land (Baltimore City Department of Planning and Department of Housing and Community Development, 2013, p. 4). Furthermore, it aims to benefit surrounding communities by improving neighborhood aesthetics, increasing property values, and providing job training and employment opportunities. To date, the city has signed leases for two new urban farms.

2.7 Contribution of the research

Through top-down city policies and bottom-up community initiatives, urban farming is taking root in cities across the U.S., promoted as a strategy to revitalize vacant land and increase food equity. Despite its promise, the scientific literature on urban farming is limited. This is not surprising, given the relative infancy of this phenomenon. However, if urban farming is to make a substantial contribution to local food production and community development, research is needed to inform its scale-up and ensure the success of urban farming projects.

A vibrant research community has evaluated various aspects of Baltimore's food system, but the city's urban farms remain an exception. Hu and colleagues (2011) conducted the only prior study to examine urban farming in Baltimore, looking at community-derived strategies to promote locally grown produce from an urban farm in

Baltimore. Their findings highlight structural, sociocultural, and organizational barriers to increasing consumption of healthy foods grown at an urban farm, several of which provide a glimpse into the importance of the social relationship between urban farms and the surrounding communities to the success of the farms.

The social nature of urban farming is a major motivation for growing food in a city as individuals and organizations work to increase access to healthy foods and connect consumers and growers. However, it also creates a new challenge for farmers, for the viability of urban farms depends in part on whether urban communities see this as an acceptable use of city space. Urban farms located in populated areas are most likely to succeed if they have the support of the local community, but little is known about how these farms are perceived by urban residents, the processes for gaining community support for urban farming, and ultimately, the social impact of these projects. My research fills this gap.

Understanding the influences that result in community support for urban farms is critical for helping farmers, local food system advocates, and city planners more effectively plan how to expand urban agriculture in cities like Baltimore. Thus, this research contributes not only to the scientific literature on urban farming, but also provides practical information to those working in the field. It also gives voice to residents' desires and concerns. The local food movement is based on a democratic and inclusive vision, but has been critiqued for losing sight of these ideals. For these reasons, this research delves deep into the interchange between community residents and urban farms, exploring residents' perceptions of urban farming and how it coalesces with their conception of city life.

Chapter 3. Methods

In this chapter I describe my study procedures in detail, beginning with an overview of my methodological approach and why I chose qualitative methods to achieve my research aims. Following this section, I describe the methods I used to select study sites, train research assistants, collect and analyze data, ensure data quality, and disseminate my findings. I also address ethical considerations related to this study.

3.1 Methodological approach

Given the exploratory nature of my research aims and my desire to gain a complex and detailed understanding of the dynamics between urban farms and local community members, I employed qualitative research methods for this study. Prior research has examined the experiences of individuals participating in urban agriculture, but, to my knowledge, no other studies have explored perceptions of urban agriculture from the perspective of non-participants. Nor have prior studies looked specifically at perceptions related to urban farming. Thus, with no predetermined hypotheses, I deemed an exploratory study the most useful contribution to this topic. In addition, an important goal of qualitative research is to identify unanticipated phenomena and influences in order to generate new theories (Maxwell, 2005). The flexibility that comes with qualitative inquiry allowed me to pursue new concepts that emerged from the data and ultimately lead to the development of a new model for conceptualizing urban farming.

Qualitative methods are not only commensurate with exploration of a topic, but are also well suited when seeking an understanding of the research participants' perspective, the context within which participants act, and the influence that this context has on their actions (Maxwell, 2005). For this study, I was interested in local community

members' perspectives regarding the use of city land for urban farming—I sought to understand their reality, without judgment of the truth or falsity of their account. Furthermore, I designed my research so as to illuminate the context that has shaped these perspectives. Ultimately, I hoped to elucidate the contextual, experiential, and personal influences that shape residents' perceptions of urban farming. These goals led me to employ a case study design for this research.

3.1.1 Collective case study design

In designing this study, an important consideration was the quirkiness of urban farming. Urban farms differ markedly from one another—from the physical appearance of the farms to the goals of the farmers who represent them—and these differences influence how people perceive and interact with the farms. Given the influence such contextual factors have on individuals' perceptions of urban farming, it was imperative to capture these details through the research process. The case study design allowed me to do just that. Case study research involves studying an issue through bounded systems (e.g., urban farms) using multiple sources of information, a process of triangulation that allows the researcher to gain an in-depth understanding of a case (Creswell, 2007). By emphasizing the collection of data from multiple sources and through multiple methods within a small number of cases, the case study methodology allowed me to get to know a few urban farms quite well, thereby facilitating the deep and focused exploration necessary for meeting my research goals.

Furthermore, I employed a *collective* case study approach in order to explore the farm-community relationship among urban farms in different stages of development. In contrast to studies that focus on a single case, a collective case study uses multiple cases

to illustrate a single issue, thereby allowing the researcher to explore multiple perspectives on an issue (Creswell, 2007). Such an approach was useful in several ways. For one, it allowed me to elucidate the differential perspectives of community members who have experienced having an urban farm in their neighborhood versus those who have no such experience. It also allowed me to explore farms with different operational models (e.g., community versus commercial farms) and the relationships they form with surrounding communities. Finally, it provided insight into the community buy-in process. In particular, I wanted to explore the circumstances under which a proposal to turn a vacant lot into an urban farm was rejected by the community. Studying a failed case provided insight into negative perceptions of urban farming and the context under which the farm-community relationship breaks down.

For these reasons, I included three types of case in this study:

1. "Active farms" included existing food-producing urban farms and the surrounding neighborhood
2. "New farms" included vacant lots where new food-producing urban farms were planned to be established and the surrounding neighborhood
3. "Rejected farms" included neighborhoods where a proposal to start a food-producing urban farm on a vacant lot was withdrawn based on objections by residents

As is common in case study research, at each site, I used multiple methods, including in-depth interviews, direct observation, and document review, to gain an in-depth understanding of the context surrounding each case. To further enhance the process of triangulation, I also involved multiple types of participants in the interviews, including urban farmers, neighborhood leaders, city residents, and key stakeholders.

3.2 Selection of study sites

As described above, I included three types of urban farming cases in this study, comprising five study sites (see Table 3). The study area for each case was defined by the existence of an active urban farm or a vacant lot that had been proposed as an urban farm, and included the surrounding neighborhood. All cases were located in residential areas with houses bordering at least one edge of each farm site. The (existing and proposed) urban farms defining each study site included both community and commercial farms.

Table 3. Urban farming case types included in the study

Case Type	Description of Case	Number of Sites
Active Farm	Fully operational urban farm (for at least one year) and the surrounding neighborhood	2
New Farm	Vacant lot where a new urban farm was planned and the surrounding neighborhood	2
Rejected Farm	Neighborhood in which a proposal to start an urban farm on a vacant lot was withdrawn based on objections by residents	1

To be eligible for inclusion, the active farm sites were required to have been in existence for at least one year. My selection of the two active farm sites was based on information provided by the manager of the Farm Alliance of Baltimore, followed by ground-truthing of the sites. The two new farm sites and the rejected farm site were selected based on information provided by the Baltimore City Office of Sustainability, where much of the city's urban agriculture efforts are housed. These three sites were a part of the city's Urban Agriculture Land Leasing Initiative, whereby vacant city-owned

land is leased to qualified urban farmers. Among the new farm sites, one farm had just broken ground at the time data collection began and was in production by the time data collection was complete, while no farming-related activity occurred at the second site during the study period.

The neighborhoods surrounding each farm site were mostly low-income, with a greater proportion of residents living below the poverty line (between 21% and 37%) as compared to Baltimore City as a whole (18%). The exception was the rejected farm site, which bordered two neighborhoods, one of which had a lower rate of poverty (12%) than Baltimore City as a whole. The majority of residents living in the study neighborhoods were black (ranging from 79% to 97% of the neighborhood's population, as compared to 64% of all Baltimore City residents) (Baltimore Neighborhood Indicators Alliance, 2014).[1]

3.3 Training of research assistants

Two research assistants assisted with participant recruitment and scheduling, data collection (including conducting interviews and performing direct observation) and interview transcription. Both were Masters students studying public health nutrition; one had prior experience with qualitative research and urban agriculture and the second had experience with community nutrition education. Both had excellent interpersonal skills, conducted high-quality work, and demonstrated a strong commitment to the study.

Prior to beginning data collection, I provided the research assistants with background on the purpose and design of the study and trained them on qualitative

[1] Income data is from 2011; race/ethnicity data is from 2010.

research methods. The training was held over three days and focused on the utility of the qualitative research approach and techniques related to conducting interviews, transcribing transcripts, conducting participant observation, and writing field notes. There were several opportunities for the research assistants to practice conducting interviews, during which I provided feedback. I also gave written and verbal feedback following the first several interviews they conducted with study participants so they could continue to improve upon their interviewing techniques.

During the data collection period, I met with my research assistants in-person or via Skype weekly in order to debrief on the interviews they had conducted the week prior, discuss further participant recruitment, and inform them about any changes to the interview guides.

3.4 Data collection procedures

Data collection occurred from October 2012 to October 2013. Methods included semi-structured in-depth interviews with key stakeholders, urban farmers, neighborhood leaders, and residents; direct observation at each farm site; and review of documents associated with each study site.

3.4.1 Semi-structured in-depth interviews

I chose to conduct in-depth interviews because they are an effective way of seeking "deep" information and understanding that goes beyond commonsense explanations (J. M. Johnson, 2001). As Johnson (2001, p. 106) eloquently explains, in-depth interviewing "begins with commonsense perceptions, explanations, and understandings of some lived cultural experience… and aims to explore the contextual boundaries of that experience or perception, to uncover what is usually hidden from ordinary view or to penetrate to more

reflective understandings about the nature of that experience." Additionally, in-depth interviews are good for topics where there may be complicated, multiple perspectives on a phenomenon (J. M. Johnson, 2001).

Semi-structured interviewing is a type of in-depth interviewing that has the same "freewheeling quality" of unstructured interviewing, but is based on the use of an interview guide (Bernard, 2006, p. 212). Therefore, I created an interview guide for each type of interviewee, but unlike fully structured interviewing, my research assistants and I did not follow the guides in terms of question order or asking each participant all questions. Rather, as is common in unstructured interviewing, we allowed participants to lead the interview, only imposing structure to keep the conversation focused on the topic at hand. This better allows respondents to open up and express themselves in their own terms (Bernard, 2006).

In total, my research assistants and I conducted interviews with 49 adult participants, including:

- Urban farmers associated with the (existing or proposed) urban farm defining each site (n=8);
- Neighborhood leaders (generally, neighborhood association leaders) from each of the study neighborhoods (n=12);
- Residents from each of the study neighborhoods (n=21); and
- Key stakeholders with expertise related to urban agriculture (n=8).

At one of the new farm sites, I was unable to recruit resident interviewees, and so my data is limited to interviews with the urban farmer and neighborhood leaders. See Table 4 for details related to the number of individuals interviewed for each case type.

Table 4. Number of interviewees by case type

Case type	Urban Farmers	Neighborhood Leaders	Residents	Key Stakeholders	Subtotal for Each Site
Active farm sites (2 sites)	3	5	12		20
New farm sites (2 sites)	4	4	5		13
Rejected farm site (1 site)	1	3	4		8
Total	**8**	**12**	**21**	**8**	**49**

Interviews with neighborhood leaders and urban farmers focused largely on the processes used to gain community support for urban farming within a neighborhood, the challenges in gaining such support, and the effectiveness of those processes. Other topics included perceptions related to the need to involve neighborhood residents in an urban farming project and residents' reactions to and level of engagement in the local urban farm. Interviews with neighborhood leaders also explored their views of urban farming. Farmers were also queried regarding details of their farm's history and operation, as well as successes and lessons learned from the community buy-in process. Interviews with residents focused on their perceptions of urban farming and how these changed over time, including their initial reactions to the idea of having an urban farm in their neighborhood, their notions of the purpose of urban farms and how they impact neighborhoods, and the factors that may have shaped their views of urban farming. Residents at active farm sites were also queried regarding their involvement with the local urban farm. We also asked resident interviewees to complete a demographic profile (see Chapter 8 for an example).

Interviews with key stakeholders centered on their perceptions of urban farming and the importance of community engagement to the success of farms. Sample interview guides are included in Chapter 8.

Interviews lasted approximately one hour and were held at a time and place that was convenient for the interviewee, often at the relevant urban farm, a public library, a café, or their home. All interviewees except key stakeholders received $20 as an incentive to participate. Interviews were audio-recorded and transcribed verbatim.

3.4.2 Sampling for interviews

As is standard in qualitative research, I used purposive sampling to identify interview participants. In contrast to probability sampling, purposive sampling involves selecting a small sample of information-rich cases for in-depth study—in this way, the researcher can learn significantly more about the topic of interest than if dozens of randomly sampled individuals were recruited for study (Patton, 2002). The urban farmers and neighborhood leaders invited to participate were those associated with the (existing and proposed) urban farms or surrounding neighborhoods included in the study. Contacts at the Farm Alliance of Baltimore and Baltimore City Office of Sustainability put me in touch with the relevant farmers. Contact information for neighborhood association leaders was available online.

To select residents, I used snowball sampling, a type of purposive sampling that involves the use of word of mouth and networks to locate individuals who meet the eligibility criteria (Grbich, 1999). After interviewing urban farmers and neighborhood leaders, we asked them to suggest local residents to interview. We also asked resident interviewees to suggest additional interviewees from their neighborhood. As data

collection progressed, I employed more of a stratified purposive sampling strategy, seeking out resident interviewees with specific demographic profiles (e.g., seeking out more male interviewees) in order to ensure my findings did not exclude perspectives from particular subgroups. My research assistants and I continued interviewing residents until I deemed that theoretical saturation had been reached at each site, based on initial analyses of the data. Table 5 provides demographic characteristics of resident interviewees.

Table 5. Demographic characteristics of resident interviewees by case type

Case Type	Active Farm Sites (2 sites, n=12)	New Farm Site (1 site, n=5)	Rejected Farm Site (1 site, n=4)
Sex	67% female 33% male	40% female 60% male	75% female 25% male
Race/ Ethnicity	75% Black 25% White 0% Hispanic	80% Black 0% White 20% Hispanic	25% Black 75% White 0% Hispanic
Age	Range: 22-72 Average: 57	Range: 24-52 Average: 36	Range: 37-65 Average: 50
Education	8% < high school 33% high school/GED 33% associate/ bachelors 25% graduate degree	0% < high school 100% high school/GED 0% associate/bachelors 0% graduate degree	0% < high school 25% high school/GED 25% associate/ bachelors 50% graduate degree
Employment Status	0% unemployed 67% employed (part or full-time) 33% retired	20% unemployed 80% employed (part or full-time) 0% retried	0% unemployed 75% employed (part or full-time) 25% retired
Home Ownership Status	67% owners 33% renters	40% owners 60% renters	100% owners 0% renters
Years Lived in Neighborhood	Range: 1-59 Average: 21	Range: 1-47 Average: 15	Range: 3-30 Average: 14

To select key stakeholders for interviews, I employed opportunistic sampling, another type of purposive sampling. With opportunistic sampling, the researcher follows new leads that arise during fieldwork (Patton, 2002). I began by interviewing individuals who I knew played a leadership role within Baltimore's urban farming community. With

the flexibility of opportunistic sampling, I later recruited key stakeholders for interviews that I learned about through other interviews and through conversations with others about my research.

3.4.3 Direct observation

Direct observation is a method of data collection in which the researcher observes behavior in the setting where it naturally occurs, thereby witnessing actual behaviors as opposed to reported behaviors. Observations can be unstructured or structured. Unstructured approaches, including participant observation and scripting observation, are generally used for the exploration of a behavior and setting. Structured observation methods use a coded instrument, thereby allowing the researcher to collect a quantifiable record of the behaviors of interest. Given the exploratory nature of my study, my research plan involved conducting unstructured observation at urban farm sites.

In participant observation, the researcher is "where the action is," (Bernard, 2006, p. 344) participating in the natural setting of those being researched and alternating between the role of participant and observer. By participating, the problem of reactivity (i.e. people changing their behavior because they know they are being studied) is reduced, creating a more natural setting (Bernard, 2006). Participant observation allows for the collection of unique types of data; helps to inform questions asked through other research methods, such as interviews; and provides a more intuitive understanding of the research setting (Bernard, 2006). Perhaps best summarized by Bernard (2006, p. 344), participant observation allows one to "intellectualize what you've seen and heard, put it into perspective, and write about it convincingly."

My research assistants and I conducted participant observation at farm sites in which there was ongoing activity (the two active farm sites and one new farm site). At the other two sites, we simply viewed the vacant lot where the farm was supposed to be located to get a sense of the space. In total, we conducted 16 unstructured participant observations (comprising 25 hours) throughout the study period, including volunteering during farm volunteer hours, shopping at neighborhood farm stands, and attending community events held at the farms. Observations focused on who was present during farm activities (including passersby), interactions between individuals, and the attitudes expressed about the urban farm and its relationship to the neighborhood.

In participant observation, elaborate field notes are generally taken as soon as possible after witnessing relevant events (Emerson, 2001). In this way, the researcher must rely on explicit awareness and a good memory. Thus, my research assistants and I immersed ourselves in the activities during participant observation, practicing explicit awareness, and then recorded our observations immediately following the period of observation.

3.4.4 Document review

To triangulate interview and direct observation data, I also collected documents from each urban farm study site. The review of these documents contributed to my understanding of the context surrounding each site and shed light on the way that urban farming is framed and "sold" to community members. I collected the following types of documents from my interviewees and online:

- Flyers and other materials used to advertise the farms activities or otherwise engage community members

- List-serve emails sent out by urban farmers regarding their farms' activities
- Blog posts written by urban farmers regarding their farms' activities
- Media articles written about Baltimore's urban farms
- Agendas and notes from community meetings regarding the introduction of an urban farm

3.5 Analytical methods

In general, data analysis followed a thematic approach; however, the analyses for each of the papers presented in Chapters 4-6 differed in subtle and significant ways. One key difference is that for Manuscripts 1 and 2, I employed cross-case analyses that examined themes across all cases, whereas for Manuscript 3, I employed a within-case analysis that captured the individual complexity within two of the cases. In this section I describe the similarities and differences in the analysis process for each paper. In addition, Table 6 provides a comparison of the analysis for each paper, including the data used, the analysis steps employed, and the unique outputs resulting from each analysis. Additional details related to the precise data analysis procedures are presented in the methods sections of each paper in Chapters 4-6.

Table 6. Summary of analysis steps for each manuscript

	Manuscript 1	Manuscript 2	Manuscript 3
Topic	Strategies for gaining community buy-in for urban farming	Local model of understanding regarding the benefits of urban farming	Assessment of local food movement critiques as they relate to urban farming
Data used	- Interview transcripts (all) - PO field notes	- Interview transcripts (except key stakeholders)	- Interview transcripts - PO field notes - Documents
Analysis steps			
Pooled data	✔ (By interviewee type)	✔ (By interviewee type)	✔ (By study site)
Wrote transcript summaries		✔	
Identified codes	✔ (Inductive)	✔ (Inductive)	✔ (Deductive)
Coded data	✔ (Transcripts)	✔ (Transcript summaries)	✔ (Transcripts)
Synthesized data	- Summarized data for each code - Integrated code summaries across interviewee types - Integrated PO field notes	- Integrated coded data from residents/ neighborhood leaders - Used coded data from urban farmers as a point of confirmation/ contrast	- Integrated coded data across interviewee types - Integrated PO field notes - Integrated document analysis
Unique analysis steps	Dissemination meeting	Matrix to compare findings between community/ commercial farms	Construction of case summaries
Outputs	Recommendations for gaining community buy-in for urban farming	Construction of an emic model	Case summaries for two cases

For all three studies, I began data analysis by pooling interview transcripts, either by interviewee type (for the cross-case analyses) or by study site (for the within-case analysis). For Manuscripts 1 and 3, the pooled sets of transcripts became my units of analysis. For Manuscript 2, I read through each transcript, seeking out examples of how each interviewee viewed urban farming as benefitting his or her neighborhood and writing a summary of these findings. These transcript summaries (pooled by interviewee type) became my units of analysis.

In the next step of each analysis, I coded the data. Coding involves deconstructing transcripts into segments of data and naming them using concise phrases (codes) that facilitate the development of abstract ideas for interpreting the data segments (Charmaz, 2006). For Manuscripts 1 and 2, I used inductive coding, meaning that codes emerged from the data rather than from pre-existing theories. I identified emergent themes relevant to each study aim from a subset of interviews, using these themes to inform my coding strategy. In contrast, I used deductive coding for Manuscript 3, establishing codes based on a set of questions I wanted to answer regarding each case (e.g., How is the farm produce distributed? In what ways are residents involved with the farm?) Coding was done using the qualitative analysis software HyperResearch (ResearchWare Inc., 2012).

The next step in the analysis process involved synthesizing the data to form my analytic interpretation. For Manuscript 1, I wrote comprehensive summaries for each code illustrated by direct quotations—a process of interpretive review that formed the findings from each interviewee type. I then integrated the summary for each code across interviewee types, looking for points of convergence and divergence. Following this process, I read through the participant observation notes, looking for observations

relevant to the thematic codes and adding this data to the summaries. For Manuscript 2, I synthesized the data for each code from the resident and neighborhood leader transcript summaries, pulling out illustrative quotes for each theme. The data from the urban farmer transcript summaries were used as a point of confirmation and contrast.

For Manuscript 3, I integrated coded data across interviewee types within the two examined cases. I then added data from participant observation field notes and the collected documents from each study site. Through this process, I constructed a case summary for each of the two cases. This step—a defining aspect of the within-case analysis approach—was unique to the third study.

The analyses for Manuscripts 1 and 2 also incorporated unique steps that led to the specific outputs presented in each paper. Based on the findings of the analysis for Manuscript 1, I developed a set of draft recommendations for gaining community buy-in for urban farms. I then held a dissemination meeting during which study participants and other stakeholders provided feedback on the draft recommendations. A mix of 16 residents, neighborhood leaders, farmers, and stakeholders attended. During the meeting I presented findings related to strategies for gaining community buy-in. I then asked the meeting attendees for written and verbal feedback on these recommendations, which elicited a rich discussion and informed my revisions to the recommendations. This feedback was incorporated into the final set of recommendations presented in Manuscript 1 and the field report.

The second study involved the construction of an emic (i.e., local) model depicting the perceived contributions of urban farming to neighborhood improvement. The model was based on findings from the resident and neighborhood leader interviews; findings

from the urban farmer interviews were used as a point of confirmation and contrast. Building the model entailed an iterative process that began as soon as I started identifying thematic codes. The model continuously evolved throughout the coding process. Once I finished coding the data and had developed a nascent model, I created a matrix that compared findings from interviewee types and site types (commercial vs. community farms) for each of the identified themes. Using this visualization of the data, I finalized the overall structure of the model.

3.6 Data quality

To enhance the trustworthiness of this research, I applied the quality criteria of credibility and transferability, as defined by Lincoln and Guba (1985). Credibility relates to the researcher's confidence in the "truth" of the findings, while transferability relates to the applicability of the findings in other contexts.

Credibility was enhanced in several ways. First, the case study design led to a richer conceptual interpretation of my findings because I was able to study multiple cases in-depth. Triangulation of the data through the use of multiple methods of data collection and multiple interviewee types also improved the study's ability to credibly capture a comprehensive understanding of community perceptions of urban farming and the community buy-in process. Additionally, conducting numerous interviews among different interviewee types over the course of a year strengthened my confidence in having obtained adequate data saturation. Finally, the dissemination meeting provided an opportunity for member validation of several of my findings and to refine the recommendations presented in Manuscript 1 to best reflect the lived experience of my research participants.

As to the transferability of this research, in all presentations and papers describing my findings I provided details related to the Baltimore context and the conditions of the neighborhoods under study (i.e., "thick description") so as to contextualize the practice of urban farming in Baltimore. In addition, I collected quantitative demographic data to describe characteristics of resident interviewees.

3.7 Dissemination

By design, this study has very practical applications for urban farmers, urban planners, and others working to support urban farming. This is particularly true for my first research aim, which centered on understanding how to gain community buy-in for urban farming. Therefore it was my priority to ensure that my findings were made available and accessible to people working in the field of urban agriculture, as well as to my research participants (some of whom were one and the same). I accomplished this in three ways.

First, as described above, I invited my research participants, as well as additional urban agriculture stakeholders in Baltimore, to a dissemination meeting in February 2014, during which I presented findings related to strategies for gaining community buy in. Second, one of my research assistants and I co-authored a report for the field (see Poulsen & Spiker, 2014). The report covers the perceived importance of community buy-in for urban farming, as well as the barriers, facilitators, and strategies for gaining such buy-in. It concludes by providing recommendations for urban farmers, city planners, and others who support urban farming to assist them in creating urban farming projects that are accepted and embraced by communities. The report has been disseminated through several outlets, including:

- The University of California Division of Agriculture and Natural Resources' urban agriculture blog (http://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=15846)
- The Johns Hopkins Center for a Livable Future Blog (http://www.livablefutureblog.com/2014/08/roadmap-for-successful-urban-farm)
- The Johns Hopkins Center for a Livable Future's webpage on Urban Soil Safety
- Takepart, an online news site (it was then picked up by Yahoo! News) (http://www.takepart.com/article/2014/09/04/why-neighborhoods-reject-urban-ag?cmpid=tp-twtr)
- "The Food List," a weekly messaging campaign done by the Lexicon of Sustainability that aims to provide tools to "fix our food system" (http://www.lexiconofsustainability.com/urban-agriculture/)
- The Farm Alliance of Baltimore's online newsletter and their 2014 annual Urban Farm and Food Fair
- The 2014 Urban Agriculture Law Conference, hosted in Baltimore by the University of Maryland Francis King Carey School of Law and the Community Law Center, Inc.
- Comfood and URBANAG, two widely disseminated email list serves that share information related to food systems and urban agriculture, respectively

Third, I presented some of my findings during a webinar on which I was an invited panelist. Entitled "Urban Agriculture – Economics, Successes and Challenges: Research, Outreach and Education Implications for the Northeast," the webinar was hosted by the Northeast Regional Center for Rural Development.

I have also disseminated my research through the more traditional academic routes of conferences and peer-reviewed journals (and continue to do so), thus helping to fill the gap in the scientific literature on this topic. I presented various findings of this research at the American Public Health Association 2013 Annual Meeting in Boston, MA and at the Joint 2014 Annual Meeting and Conference of the Association for the Study of Food and Society and the Agriculture, Food and Human Values Society in Burlington, VT. I also gave a seminar on my research as part of the Johns Hopkins' Environment, Energy, Sustainability and Health Institute's seminar series. Manuscript 1 (see Chapter 4) is published in the *Journal of Agriculture, Food Systems, and Community Development* (Poulsen, Spiker, & Winch, 2014).

3.8 Ethical considerations

The Institutional Review Board at the Johns Hopkins Bloomberg School of Public Health approved this research before I began collecting data.

3.8.1 Informed consent

During recruitment, potential participants were informed about the purpose of the study and the nature of the interview. Prior to commencing each interview, my research assistants or I read the interviewee the consent document that contained a description of the study, general information on study procedures, assurance of confidentiality and that participation was voluntary, and contact information to receive further information (see Chapter 8 for an example consent document). After responding to any questions posed by the interviewee, the researcher asked the interviewee to verbally consent to proceeding with the interview. All of the recruited interviewees gave their consent to continue with the interview.

3.8.2 Risks and benefits

This study involved minimal risks for participants considering that the topic is not of a sensitive nature. To offset the (unlikely) risk of a participant becoming upset by the topic, all participants were assured that they could discontinue participation in the interview at any point, or refuse to answer any questions that they did not want to discuss. Though no interviewees ended the interview early or refused to answer particular questions, on occasion an interviewee requested that his or her response be kept "off the record." This usually occurred when interviewees were discussing negative aspects of an organization/person. I honored their requests and did not transcribe these responses.

To minimize the risk of a breach of confidentiality, I kept interview data separate from identifying information, instead using a unique code to label interviews. The document connecting the identifiers with these codes was stored kept separate from interview data and stored on a locked computer.

To minimize the burden on study participants, interviews were scheduled at a time and place that was convenient for them, and researchers were mindful of participants' time, keeping the interview to one hour or less unless the interviewee indicated an inclination to keep talking.

In terms of benefits, many participants appeared to enjoy having the opportunity to voice their opinion about the topic. The researchers offered to share the findings from the study once it was complete, and many interviewees expressed an interest in hearing what we had learned. To fulfill this promise, I invited all interviewees to the aforementioned dissemination meeting and emailed a copy of the field report (described

in the Dissemination section) to all interviewees for whom I had an email address. All interviewees (except key stakeholders) also received $20 as compensation for their time.

Chapter 4. "Conceptualizing community buy-in and its application to urban farming"

4.1 Abstract

Supporters of urban farming—a type of urban agriculture that emphasizes income generation—view it as a productive use of vacant land, increasing access to fresh produce and contributing to local economies. Yet its viability depends on gaining "community buy-in" (i.e., the acceptance and active support of local residents). While recognized as important to the success of socially oriented programs, information is lacking regarding effective processes for gaining community buy-in. Through participant observation at urban farms and interviews with urban farmers, neighborhood leaders, city residents, and key stakeholders in Baltimore, Maryland, we explored the perceived importance of community buy-in for urban farming, as well as the barriers, facilitators, and strategies for gaining such buy-in. Findings reveal consensus regarding the importance of buy-in, justified by farms' vulnerability to vandalism and the need to align farm services with local residents' desires. Barriers to buy-in include unfamiliarity of residents with urban farming, concerns about negative impacts on the neighborhood, and perceptions of urban farms as "outsider projects." Buy-in is facilitated by perceived benefits such as access to fresh produce, improvement of degraded lots, employment and educational opportunities, the creation of community centers, and community revitalization. Strategies urban farmers use to gain community support followed three main phases: (1) gaining entry into a neighborhood; (2) introducing the idea for an urban farm; and (3) engaging the neighborhood in the urban farm. We make recommendations based on these three phases to assist urban farmers in gaining community buy-in and discuss themes that can be applied to community buy-in processes more broadly.

4.2 Introduction

Urban farming is a type of urban agriculture that emphasizes income-generating agricultural activity. Urban farms are generally categorized as either community farms (which are driven by social goals) or commercial farms (which are production-focused), and so can be run as nonprofits or for-profits. However, unlike the more familiar community gardens, in which the growers consume their own produce, urban farms grow food for commercial distribution, selling produce through venues such as neighborhood farm stands, farmers markets, and restaurants.

Urban planners, public health practitioners, and local food advocates have promoted urban farming in many U.S. cities, including Baltimore, Maryland, the site of this study. In Baltimore, this enthusiasm stems from concerns about an overabundance of vacant properties, a lack of access to healthy foods in many low-income neighborhoods, and high unemployment rates, three interrelated problems that urban farms are seen as addressing. Over a dozen urban farms have started in Baltimore since 2010, and while most reflect the efforts of individuals and community groups, the municipal government also supports urban farming, including through an innovative initiative that leases vacant city-owned land to experienced farmers (Baltimore Office of Sustainability, 2013b).

While excitement for urban farming abounds among experts, it is important also to consider the perspectives of city residents whose neighborhoods host urban farms, particularly given critiques of urban agriculture as a white-dominated practice that occurs primarily in black and Latino neighborhoods, with little participation from within those communities (Hoover, 2013). Questioning the inclusivity of urban agriculture, Hoover (2013) recently called for an expanded research agenda that includes the perspectives of

more ethnically and racially diverse populations on urban agriculture. Heeding this call and operating under the assumption that urban farming is most viable if it has the support of local communities, the aim of our study was to determine effective processes for gaining the "buy-in" of city residents for urban farming. Drawing upon findings from interviews with urban farmers, neighborhood leaders, residents, and key stakeholders, participant observation of urban farms, and incorporating feedback from a stakeholder dissemination meeting, we explored the perceived importance of community buy-in for urban farming, as well as the barriers, facilitators, and strategies for gaining such buy-in. Based on these findings, we propose a series of recommendations to assist urban farmers in gaining community buy-in for future farming projects that are embraced by local residents.

4.2.1 Conceptualizing community buy-in

Though the term "buy-in" originates in the financial sector, it has been adopted by implementers of projects ranging from the promotion of physical activity (van der Stoep, 2000) to tourism development (Kahn et al., 2002) to describe stakeholders', participants', and local community members' acceptance of and willingness to actively support projects. Despite recognition of the importance of community buy-in to a project's success and survival, there appears to be a major gap in the literature regarding effective processes for gaining community buy-in.

Two related concepts have been researched more widely: community participation and community acceptance. *Community participation* refers to "the social process of taking part (voluntarily) in either formal or informal activities, programs and/ or discussions to bring about a planned change or improvement in community life,

services, and/or resources" (Bracht & Tsouros, 1990, p. 201). This broad definition is appropriate given the many ways that community participation is conceptualized. While a variety of classifications of community participation have been proposed, Morgan (2001) captures the main conceptual dichotomy. The utilitarian perspective sees participation as a collaborative effort in which community members agree to collaborate with an externally determined project, often contributing resources in return for some expected benefit. The empowerment perspective sees participation as local community members taking responsibility for identifying and working to solve their own problems.

The risk in labeling what we refer to as "community buy-in" as community participation is that despite categorizations of community participation that include weaker participatory forms, the term often connotes the empowerment perspective. From this perspective, community ownership is seen as a critical outcome of participation, with community members defining their own health or social agenda and committing to long-term community involvement in the project (Bracht & Tsouros, 1990). In contrast, projects seeking community buy-in may desire community input and involvement in project activities, but ownership and control of these (often preconceived) projects ultimately lie with the outside organization.

Community acceptance has not been as widely researched, but research on social acceptance of the placement of renewable energy production sites (e.g., wind farms) may be applicable to our research on urban farming since both relate to community reactions to a physical change in landscape. In a special issue of *Energy Policy* on this topic, community acceptance is defined as acceptance "by local stakeholders, particularly residents and local authorities" (Wustenhagen, Wolsink, & Burer, 2007, p. 2685) for

decisions and projects. Unlike the empowerment model of community participation, community acceptance is sought for predetermined projects; community involvement is generally limited to the planning phase; and ownership of the project clearly lies with the sponsor. Though there is significant overlap between community acceptance and community buy-in, these concepts are not synonymous in that "acceptance" implies a more passive compliance whereas "buy-in" insinuates active support.

Thus community buy-in is not equivalent to community participation or acceptance, but instead provides a unique end goal that has utility for the introduction of new projects. That said, there are limitations to using the term "buy-in" that should be addressed up front. First, considering its origin in the corporate world, buy-in can carry a financial connotation that may be inappropriate for socially oriented programs. In the case of urban farming, this connotation is not entirely irrelevant, considering that urban farming emphasizes income-generating agricultural activity and commercial urban farms are run as small businesses. Second, community buy-in may be construed as jargon that is not accessible to a lay audience. For these reasons, organizations might choose to use terms such as "community support" when describing their programmatic goals, particularly when communicating with participants. In this paper, we use the term "community buy-in" despite these limitations because (a) we believe it aptly describes the space that lies on the continuum between community participation and acceptance; and (b) the term is frequently used, but poorly described, in the context of health and social justice programming. As such, processes for achieving buy-in within the context of health and social justice programming need to be defined. Through this case study of

urban farming in Baltimore, we seek to contribute to the task of determining effective processes for gaining community buy-in.

4.3 Methods

We used a qualitative, collective case study methodology to explore the relationship between urban farms located in residential neighborhoods and the residents living in proximity to them. This methodology involves studying an issue through multiple bounded systems (in our case, urban farms) using several sources of information (Creswell, 2007). We deemed this methodology appropriate considering its usefulness in gaining an in-depth understanding of each case, and we employed a collective case study approach in order to explore the farm-community relationship among urban farms in different stages of development. Cases comprised three types: (1) "active farms" included neighborhoods where there was an urban farm that had been operational for more than one year (2 sites); (2) "new farms" included neighborhoods where there was a vacant lot where a new urban farm was planned to be established (2 sites); and (3) "rejected farms" included neighborhoods where a proposal to start an urban farm on a vacant lot was withdrawn based on objections from residents (1 site).

4.3.1 Selection of urban farming sites for case studies

The farms selected for inclusion were located in residential areas in Baltimore, Maryland, and within direct view of multiple households, thus increasing the relevance and salience of the topic for interviewees. The cases included both community farms and commercial farms. Among the two new farm sites, one had just broken ground at the time data collection began and was in production by the time data collection was complete, while no farming-related activity occurred at the second site during the study period.

The neighborhoods surrounding each farm site were mostly low-income, with a greater proportion of residents living below the poverty line (between 21% and 37%) as compared to Baltimore as a whole (18%). The exception was the rejected farm site, which bordered two neighborhoods, one of which had a lower rate of poverty (12%) than Baltimore as a whole. The majority of residents living in our study sites were black (ranging from 79% to 97% of the neighborhood's population, compared to 64% of all Baltimore residents) (Baltimore Neighborhood Indicators Alliance, 2014).[2]

4.3.2 Data collection procedures

Data were collected from October 2012 to October 2013 by the study author and two trained research assistants. In order to understand the ways in which urban farming projects attempt to gain community support and how residents respond to these efforts, we conducted in-depth interviews with 49 individuals, including key stakeholders with expertise related to urban farming (*n*=8), urban farmers associated with each site (*n*=8), and neighborhood leaders (*n*=12) and adult residents from the study neighborhoods (*n*=21). Farmers, neighborhood leaders (which included members of neighborhood associations), and key stakeholders were purposively selected for participation. Residents were selected through snowball sampling. All interviewees except key stakeholders received US$20 as an incentive to participate. Interviews were semi-structured following prompts from an open-ended discussion guide that was refined over the course of the study to follow up on emergent themes. Interviews lasted approximately one hour and took place at a location of the participants' choosing, frequently a public space such as a library or the relevant urban farm.

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[2] Income data is from 2011; race and ethnicity data is from 2010.

In order to gain a contextual understanding of our research sites and the issues discussed during interviews, we also conducted 16 unstructured participant observations (totaling 25 hours) throughout the study period at farm sites in which there was ongoing activity, including volunteering during farm volunteer hours, shopping at neighborhood farm stands, and attending community events held at the farms. Observations focused on who was present during farm activities (including passersby), interactions between individuals, and the attitudes expressed about the urban farm and its relationship to the neighborhood. We wrote detailed notes immediately following each observation. At one new farm site and the rejected site where no activity occurred, we viewed the vacant lot where the proposed farms were to be located.

4.3.3 Data analysis

Interviews were audio-recorded and transcribed verbatim, and transcripts were pooled by interviewee type (key stakeholders, urban farmers, neighborhood leaders, and residents) for data analysis. Data analysis followed a thematic approach, performed primarily by two of the researchers. We first developed a codebook by identifying themes relevant to our study aim from a subset of interviews. After coding each group of transcripts, we wrote comprehensive summaries for each code illustrated by direct quotations—a process of interpretive review that formed the findings from each interviewee type. We then integrated the summary for each code across interviewee types, looking for points of convergence and divergence. Following this process, we read the participant observation notes, looking for observations relevant to the thematic codes and adding this data to the summaries. Based on these findings, we developed draft recommendations for gaining community buy-in for urban farms. We then held a dissemination meeting during which

study participants and other stakeholders provided feedback on the draft recommendations through discussion and written feedback. This feedback was incorporated into our final set of recommendations.

4.3.4 Data quality

The credibility of our research was enhanced in several ways. First, the in-depth study of multiple cases led to a richer conceptual interpretation of farm-community relationships. Triangulation of the data through the use of multiple methods of data collection (interviews and participant observation) and interviewee types also improved the study's ability to credibly capture a comprehensive understanding of the community buy-in process. Additionally, conducting numerous interviews among different interviewee types over the course of a year strengthened our confidence in having obtained adequate data saturation. Finally, the dissemination meeting provided an opportunity for member validation of our findings and to refine our recommendations to best reflect the lived experience of our research participants.

4.3.5 Ethical considerations

The Johns Hopkins Bloomberg School of Public Health Institutional Review Board approved this study. Interview participants provided verbal informed consent prior to participating in the study.

4.4 Results

We first discuss our findings related to the importance of community buy-in for urban farming projects. We then describe the barriers and facilitators to achieving buy-in, as

well as the strategies farmers and others[3] use to gain community buy-in for urban farming. The final section of our results describes the outcome of our stakeholder dissemination meeting and provides our final set of recommendations.

4.4.1 Importance of community buy-in for urban farms

We found consensus regarding the importance of community buy-in for urban farms located in residential areas. While neighborhood leaders were most ardent in their views, with several emphasizing the importance of community buy-in to the viability of *any* new project or business that enters a neighborhood, other interviewees saw a specific need for urban farms to become "a part of the neighborhood" since farms are not traditionally located in cities.

Opinions varied as to the degree of community buy-in that is necessary. For example, one farmer stated that a few outspoken naysayers should not "keep you from serving all these other people that live in the neighborhood." In contrast, one key stakeholder noted the difficulty that arises when even a "small minority of people" is opposed to an urban farm:

> *It's very hard to say to your neighbor, "I don't care how upset you are. This is going in front of our houses..." Nobody wants to ruin other people's experiences of their safe space, their home space....It can't really be like a purely democratic process. Like 51% is not enough. (Key stakeholder)*

The most common justification for community buy-in provided across interviewees was to build understanding and solidarity so community members will help protect the farm. In the spirit of creating a welcoming atmosphere (and in some cases, to

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[3] We use "urban farmer" to refer to the individuals, organizations, or companies that start and manage an urban farm. For simplicity, we discuss strategies that urban farmers use to gain community buy-in, but in some instances, municipal government offices are also actively involved in this process.

save money), many urban farms are not fenced, so there is little to deter people from entering. Therefore, as one stakeholder stated, if people are opposed to a farm, they "can come in the middle of the night and slash all the plastic up on your hoop house...and stomp on your plants." Many neighborhood leader and resident interviewees confirmed this concern about vandalism, with one resident stating, "If you don't have the neighborhood backing you, then you're pretty much gone....It's not going to last long. It'll be done in six months."

According to interviewees, engaging neighborhood residents alleviates this concern by creating respect for and a sense of ownership of the farm, which can result in residents keeping an eye out for it. Every urban farmer we interviewed described community support as the best form of security for an urban farm, an opinion backed by the fact that our study sites had experienced minimal vandalism.

The second reason given for needing community buy-in relates to the potential of urban farms to serve the surrounding neighborhood. According to some interviewees, urban farmers must engage residents to ensure their projects provide benefits that resonate with local residents, rather than making assumptions about what the neighborhood desires. One stakeholder emphasized the need for a purposeful process to gaining community buy-in if an urban farming project aims to "help" the neighborhood.

> *[Otherwise] you're there for this self-righteous idea you have for yourself, but you're not trying to allow the community to grow with your idea...you'll always have that tension there....I can have the greatest idea, but if people...don't feel the benefits of it because they haven't bought into the idea, then it's really just a great idea that won't go nowhere. (Key stakeholder)*

4.4.2 Barriers and facilitators to community buy-in

We identified several common barriers that can negatively affect city residents' views of urban farming, as well as a wide range of perceived benefits associated with urban farming that positively influence residents' reactions. These are summarized with exemplary quotations in Tables 7 and 8.

Table 7. Barriers to gaining community buy-in for urban farming identified in qualitative interviews in Baltimore City

Barrier	Exemplary Quotation
Lack of familiarity with urban farming	*People don't have a mental image. They hear "farm" and maybe they picture cows or fields of wheat, or tractors, and they just don't see how that could possibly fit into an urban environment. (Key stakeholder)*
Concern about the appearance of urban farms	*You're not up a dirt road where just your two immediate neighbors are seeing you. You really have a responsibility...to keep it looking sharp, to keep it beautiful....Where you could have some equipment lying around, or where you could leave a pile of woodchips sitting at the corner of your plot for a while in the country, you just can't do that in the city. (Key stakeholder)*
Fear that an urban farm will attract rats to the neighborhood	*I was thinking about thousands...of rodents just running — all migrating to this one area, you know, and it'll be really a mess. (Resident, new farm)*
Worry that urban farms will fall victim to vandalism	*So far, nobody's done anything to [the farm]....And I'm really kind of surprised.... [Interviewer: ...Why's that?] Because it's Baltimore City! You got dysfunctional children, you have drug addicts...and all kinds of people who just constantly coming through this neighborhood. (Resident, new farm)*
Concern about the safety or cleanliness of food grown on urban farms	*There was a lot of concern in the neighborhood. A farm there? [Residents] really didn't think it was a good idea....'Cause that area was so filthy. There was so much trash. So much rats. A lot of folks threw out mattresses. It was like a dumping ground. It was really bad, I mean not some place you wanna eat from. (Neighborhood leader, active farm)*

Concern that urban farms may replace other potential development	*It's city-owned land that we're talking about, so really, it belongs to the community....We're choosing land that is not being used for any positive purposes...But still, there is the potential that it could be used for anything. And so to give it — even for a period of just five years — to private individuals for a for-profit purpose, that maybe feels like something is being taken away from you, even if it's just the potential opportunity of something else that could serve people more broadly. (Key stakeholder)*
Distrust of urban farming projects that are run by "outsiders"	*So I think that initially starts with a disbelief in thinking that somebody is coming in — again, white spoiled kids — are coming in to take advantage of their neighborhood. Even though obviously nobody was claiming that land before. (Resident, active farm)*
Concern about the sustainability of urban farms	*You know that we're coming in from the outside, and we have the idea about what's best for your neighborhood, and it's not something that you came up with...It's us just coming in and plopping it down. And then maybe we just walk away, and let it fall to pieces and become an eyesore....People have experience of that. Sometimes experience that's decades old, but that's still very resonant. (Key stakeholder)*

Table 8. Services urban farms are perceived to provide neighborhoods in Baltimore City

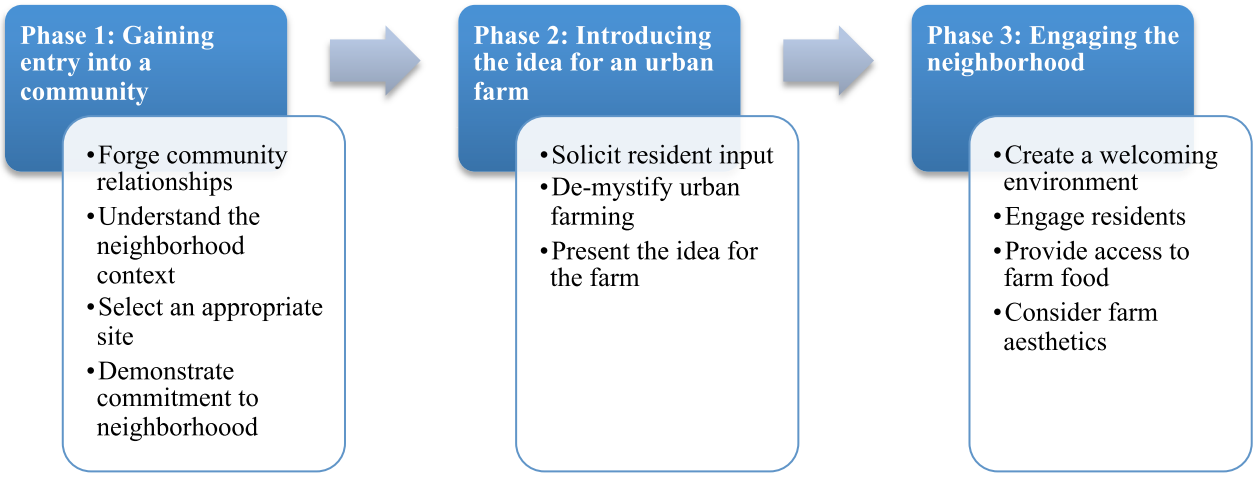
Service	**Exemplary Quotation**
Increased access to fresh produce	*It's going to bring more people around because like I said, some people like fresh vegetables... people... will come around and want some vegetables, so it's going to be nice for the neighborhood. (Resident, new farm)*
Use of degraded lots for productive uses	*I think it was very exuberant feeling and exciting to see something like [the farm] happening in the area, because before it was just an empty plot of land and when that happens and there's always an accumulation of garbage, bottles, and things of that sort. So just to see a group of people really energized to change it and to also not only do it for themselves, but to give back to the community. (Resident, active farm)*
Employment opportunities for local residents	*We need to create jobs. And this is why I'm more interested in for-profit farming because I think that the value that urban farms can bring to the city is not just the food that it harvests, but I think that there are a thousand jobs that we could create if we were serious about local food production. From composting to*

	growing food, processing food, washing it, packaging it, distributing it, selling it. (Urban farmer, rejected farm)
Educational opportunities about the provenance of food, agricultural processes, and nutrition, particularly for youth	*People don't understand where your food comes from, how to grow it, why it costs so much. So that's the nice point about urban farming, it shows people what it takes, you know to actually put something on the plate. (Urban farmer, new farm)*
Provision of a central space that brings the community together	*It may sound cliché, but it helps the community grow itself because you have more people that are involved and taking care and you have a sense of, you know, this is mine, this is where I live. You have a sense of pride. (Resident, active farm)*
Revitalization of the broader community	*I think that these urban farms have the potential for urban revitalization. I think they have the potential to take an area that is in a downward spiral, begin positive momentum. (Urban farmer, new farm)*

4.4.3 Strategies used to gain community buy-in

Figure 4 outlines the strategies for gaining community buy-in that emerged from our findings. These strategies fell into three main phases: (1) gaining entry into a neighborhood; (2) introducing the idea for an urban farm to a neighborhood; and (3) engaging the neighborhood in the urban farm.

Figure 4. Strategies used by urban farmers in Baltimore City to gain community buy-in



Phase 1. Gaining entry into a community

The first phase refers to the early strategies urban farmers use to develop ties within a neighborhood. While these were generally discussed as useful for farmers who are not from the neighborhood in which they plan to farm, we found that even those who farmed in their own neighborhood drew upon these strategies to help garner broader support.

Forging community relationships. Interviewees recommended building relationships with individuals and community groups as a way of gaining entry in a neighborhood and as a precursor to all other steps in the process. Interviewees discussed two key strategies to build community relationships: (1) identifying community leaders who can act as champions for the farm, such as civically engaged residents, community association representatives, leaders of community-based organizations, and city council members; and (2) collaborating with community groups with an established presence in the neighborhood.

Most urban farmers we interviewed relied on community associations to facilitate entry into a neighborhood, as these associations can play critical roles in garnering broader community buy-in. These groups were in full support of all the active and new farms in our study before the farmers ever broke ground. A drawback to relying on community associations is that because they are viewed as official entities that can grant "permission" for the development of urban farms, they can obscure the voices of residents outside of the community associations. Several interviewees raised concerns about the lack of representativeness of community associations, particularly at the rejected farm site, where a potentially supportive neighborhood was unable to override opposition to the proposal for a new urban farm from a community association that was viewed as unrepresentative of the neighborhood.

In addition to community associations, some urban farmers we interviewed had established formal partnerships with community-based organizations in the neighborhood. This had facilitated the process of gaining the trust of local residents for the urban farm, alleviating skepticism about the farm being managed by individuals from outside the neighborhood.

Understanding the neighborhood context. To gain entry into a neighborhood, it is important for urban farmers to understand the current and historical context of the neighborhood. One interviewee framed this approach as:

> *...recognizing that you're part of an evolving organism of your neighborhood that has been around for a long time. And figuring out how to work with people who are there, and have been there, and have been working on these issues for a long time. And not being really presumptive about what your role might be before building those connections. (Key stakeholder)*

Gaining this understanding allows urban farmers to ensure a farm is a reasonable fit for the neighborhood, build on existing resources, and identify ways the urban farm can provide services to the neighborhood that are valued by residents, rather than — as one stakeholder put it — assuming "you know more about what this community needs than what the community knows." One neighborhood leader complimented an urban farmer for such efforts:

> *It was clear that they did their research about [the neighborhood]. They looked at something that would be appealing to us and they tailored their message TO us...I feel like it would have shut people off before they even were presented all the great things that, was like, "Y'all don't know this area." But it was clear that they did their research. (Neighborhood leader, rejected farm)*

Selecting an appropriate site. A farmer looking for land to start an urban farm must not only consider parameters such as its slope, exposure to sunlight, and soil quality, but also the role it plays in the neighborhood's social environment. For example, trash-filled vacant lots act to degrade neighborhoods, so their transformation to a productive farm is often a welcome change. In contrast, urban farmers in our study avoided vacant lots that were actively used by residents, even when used for informal purposes such as parking for cars. As one farmer explained, "You have to look at the utility of the land...the way that residents look at it."

Demonstrating commitment to the neighborhood. A final strategy in this phase relates to the perception that urban farmers are "outsiders" potentially exploiting the neighborhood's resources. Based on our findings, this view is more common when farmers are not residents of the neighborhood in which they farm or are of a different race from the majority of residents, and stems from a history of strained racial relations in Baltimore. We found that urban farmers overcome this perception by demonstrating their

dedication to the larger neighborhood. Toward this end, some interviewees felt it is important for farmers to move to the neighborhood in which they are farming.

> *I do think the ownership has to be local....Because if not it's just like somebody's just found a good place to plop their factory, and then they go home at night. But you learn so much by being IN the community. (Resident, rejected farm)*

Other farmers found acceptance by taking an active role in the community, for example, by attending community association meetings, or by having a visible presence at the farm and engaging passersby.

> *In honesty...first I thought the majority of the people that were up there were white people. And I thought it was gonna benefit them. And then, [the farmers] came out in the community strong. And my whole thought just turned around....They got involved with the community association, they would bring stuff to the meetings, they knocked on every door darn near around here. And they gave samples out....It wasn't, "Cause we white, we gonna do this and... take it over here..." They gave back right to the community. (Resident, active farm)*

Phase 2. Introducing the idea for an urban farm to a neighborhood

The second phase addresses the way in which a farm is introduced to the neighborhood.

Resident input. One of the strongest themes that emerged on gaining community buy-in was the need to allow residents to have a voice in the planning process. Neighborhood leaders warned that not soliciting local input would breed resistance to the farm, regardless of the merits of the project, framing such inclusiveness as a matter of fairness.

> *That directly affects our home, not theirs, so for anybody to have more say in it than us, that would not be fair...We're the ones that's going to feel the impact of everything the most. (Neighborhood leader, new farm)*

Underscoring these sentiments is the idea that residents should be involved early on, before any farming activity starts. Otherwise, interviewees warned that efforts to involve the community may be seen as self-serving, for example to meet the requirements

of a grant. One neighborhood leader applauded the urban farmers in his neighborhood for their early and open approach:

> *This is someone who says, "We have an idea. We wanna know what the community thinks about it!...We wanna ENGAGE with you." And that's so different than a lot of people who come into the neighborhood. They have their plans all made up, and they come to the association, and say, "We've got this plans, we've got this money, this is what we're gonna do, we want a letter of support." (Neighborhood leader, active farm)*

Demystifying urban farming. Considering that a common barrier to community buy-in for urban farming is city residents' lack of familiarity with the activity, an important component of this phase is to "demystify" urban farming. Many resident interviewees had no exposure to an urban farm until one appeared in their own neighborhood. Most of these interviewees expressed initial skepticism, but across the board, their doubts were alleviated once they saw the farm up and running. To avoid the initial skepticism and give residents an idea of what to expect from an urban farm, interviewees suggested sharing examples of existing farms, for example by using diagrams of potential farm layouts and "before and after" photos of existing urban farms, as well as inviting neighborhood leaders to visit an existing urban farm.

Presenting the idea for an urban farm. Our findings revealed two common approaches to introducing the farm proposal to a neighborhood: presenting at community meetings and going door-to-door to speak with residents living around the potential farm site. Neighborhood leaders expressed appreciation for the high level of detail that urban farmers provided in their presentations, which included potential benefits of the farm, mock-ups of the space, and an explanation of the farm's management.

> *Because of that, the simplicity of their presentation, it didn't seem like they were putting on smoke and mirrors. You know, very straightforward, this is it, we're laying it out all before you, there's no behind-the-scenes things*

that we're trying to keep from your eyes. (Neighborhood leader, rejected farm)

Interviewees also thought it critical to emphasize how an urban farm can benefit a neighborhood and attributed the positive reception some farmers have received to their effective articulation of how a farm would alleviate problems in the neighborhood, such as improving access to fresh vegetables or mitigating illegal dumping on a vacant lot.

Interviewees noted the importance of communicating with residents about their concerns regarding urban farming. Several interviewees specifically recommended proactively addressing widespread concern about farms attracting rats to a neighborhood. This concern was reported to be the main cause of resistance for developing an urban farm at the rejected farm site and escalated so quickly that the farmers never had an opportunity to address the issue.

Phase 3. Engaging the neighborhood in the urban farm

The third phase involves an ongoing process to encourage local residents to engage with the farm. Such efforts appear to positively affect community buy-in by further demystifying urban farming and facilitating respect for the farm.

Creating a welcoming environment. One pre-requisite to neighborhood engagement is creating a welcoming and inclusive environment at urban farms, which includes the physical space as well as the manner in which urban farmers interact with the neighborhood. One farmer discussed the importance of having a regular presence in the neighborhood, stating, "I think engaging with people and showing them around makes them feel like they are able to come in and get used to the project." We observed many instances of positive informal engagement with residents. For example, while

volunteering at one active farm site, a woman walking by with her children stopped to question the farmer about a plant with which she was unfamiliar. In response, the farmer let each child try harvesting some of the Swiss chard and gave the woman a bunch to try, explaining how to cook it.

Interviewees also shared that a diversity of people involved with a farm creates a more inclusive environment:

> *For a lot of people, and certainly I'd say older African American residents, if you haven't been invited onto someone's space and you see them working, that's not your space to enter...So the more people we can get physically on the site itself, shows it's an open space....And if you don't see...somebody that looks like yourself, you might be less likely to join them. (Neighborhood leader, active farm)*

Resident engagement. We found that urban farmers use a variety of strategies to engage residents on the farm, depending on their business model and the preferences of neighborhood residents. Some activities engage the broader neighborhood, such as hosting celebratory events at the farm, offering gardening workshops, creating neighborhood recipe books, and making farm produce available to residents. Other efforts engage a smaller number of residents in ongoing activities, creating strong allies for the farm. For example, at one active farm site, the urban farmers created a community garden on the lot across from the farm, giving residents ownership of part of the farm space. Of note, while volunteerism can create important relationships between volunteers and urban farms, it may not be an option for all city residents. Some resident interviewees were skeptical that local residents would have the time or desire to volunteer and even worried that an urban farm would not be viable if it relied upon residents' active involvement.

Youth participation was viewed as beneficial to community buy-in, as it provides a gateway for demystifying the farm for their families while also creating constructive activities for youth that are sorely lacking. Youth had become involved at the active farm sites through collaboration between the farms and local elementary schools, family-focused community events, and farm internships. Involvement was often informal; for example, at one active farm we observed that local youth were almost always present when the farmers were working, with one six-year-old girl calling the farm her "backyard."

Access to farm food. A key strategy for connecting local residents to an urban farm is providing access to the farm's produce. Nearly all the neighborhood leaders and residents we interviewed assumed that at least some portion of the food grown at their local urban farm would be made available to residents. This assumption was even made at sites where there were no opportunities for residents to purchase food.

Stakeholders generally suggested being generous with farm produce, giving away samples or selling produce in the immediate neighborhood at a lower price than would be sold at a farmers market in a more affluent neighborhood. However, some interviewees thought giving farm produce away for free would devalue it. As one stakeholder explained, residents are "more likely to eat it if they pay for it...I think that if they just put the food out in a bag and said 'it's for free,' it would just sit there." That said, many neighborhood leaders and resident interviewees assumed that food from an urban farm would be more affordable than supermarket produce since it "cuts out the middle man."

Beyond cost, stakeholders discussed the importance of letting local residents have a say in what is grown and explained that many urban farms grow produce that local

residents want to eat, even when that means growing certain crops that have a low return on investment.

> *Heirloom tomatoes are great, but we gotta get ones that look like the tomatoes in the stores a little bit. We need some orange carrots, we need beets that look standard. (Urban farmer, new farm)*

Communication about the farm. The urban community farms we studied communicated with residents in order to keep them apprised of the farm's activities, promote events held at the farm, solicit volunteers, and market the farm's produce. Interviewees reported that the most effective communication strategies were face-to-face strategies such as signage on the farm, flyers given to passers-by, knocking on doors of nearby residents, and providing samples of foods grown on the farm. Some farmers emphasized the importance of simply walking around the neighborhood and having spontaneous social interactions with residents. Others attended community association meetings on an ongoing basis as a part of their communication strategy. The two active farm sites also have an online presence, but urban farmers reported using online methods primarily to communicate with an audience beyond the neighborhood, since many residents do not use these forms of communication.

Farm aesthetics. While urban farms often inherently improve the appearance of a neighborhood by cleaning up the trash that has accumulated in a vacant lot, simply removing trash does not appear to be sufficient for gaining community buy-in. Urban farms face higher aesthetic standards than do rural farms. An added challenge noted by stakeholders is that a farm's first season is a critical time to cultivate community buy-in, but a farm is likely to look messy when farmers are setting up the farm. At one site where the farmers were significantly constrained in the amount of time they could devote to the

farm, tension had arisen in the neighborhood regarding the farm's appearance. As a result, we observed many instances in which the farmers integrated considerations of appearance into their decisions about how they used their own and volunteers' time and the crops they planted, hoping to regain the community's goodwill.

4.4.4 Recommendations and feedback from dissemination meeting

Drawing upon these findings, we designed draft recommendations to assist urban farmers in their community buy-in efforts. Table 9 lists these draft recommendations and displays the ratings and comments received through the feedback process. There was little variation in ratings, with most recommendations viewed as moderately feasible for farmers to put into practice and quite beneficial to residents.

Table 9. Results from feedback on draft recommendations from the dissemination meeting

Feasibility and benefit ratings based on a scale from 1 to 5, with 5 being the highest or best			
Draft recommendation	**Feasibility for farmers**	**Benefit to residents**	**Selected qualitative feedback**
Identify ways the farm can support the neighborhood's own goals	3.19	4	• Recognize diversity within geographic communities and that cohesive "neighborhood goals" do not exist • Farmers should also build on resources and social capital already in place • Acknowledge the challenge farmers face in balancing demands of production farming with community engagement

Build relationships with community leaders or groups who can be a champion for the farm	3.44	3.94	• Depth and quality of community relationships outweigh the services provided by urban farms in terms of community buy-in • Important to build multiple relationships within neighborhoods, not just with leaders of a single group
Include community members in the process of planning the farm	3.31	4.31	• The onus of gaining community input lies with the farmer rather than placing demands on time and energy of residents and leaders • Farmers should approach the local community with a "blank slate," rather than a predetermined idea for an urban farm • Recognize informal forms of community input (e.g., casual conversation) • Important to acknowledge the agricultural knowledge that exists among neighborhood residents
Talk to local residents to ensure an appropriate site is selected for the urban farm	3.63	4.38	• Enlist trusted organizations and/or individuals to facilitate this process
Demystify urban farming for residents in terms of what an urban farm is like, including addressing common concerns and explaining potential benefits	3.31	4.31	• Understanding the neighborhood context can help frame the idea for an urban farm for a particular neighborhood • Sharing examples of other urban farms through tours or before and after photos can be an effective method • Ongoing and transparent communication about the

			purpose of the farm is critical
Show dedication to the neighborhood through active involvement in the community	3.25	4.44	• Finding opportunities for involvement is simple, but limited by farmers' time and energy
Create opportunities for residents to be involved with the urban farm	3.38	4.53	• Let residents define the ways they want to be involved • Volunteerism is a limited mechanism for involvement considering the demands it places on farmers and the lack of feasibility for many residents
Provide opportunities for local residents to access farm produce	3.38	4.75	• Challenges in making produce accessible include timing and location of purchasing opportunities, effective advertising, and ensuring food is desirable to residents • Difficult to balance a farmer's economic sustainability with affordability of food
Ensure the urban farm meets expectations for the neighborhood's appearance	3.31	4.44	• Important to meet residents' expectations for farm appearance, particularly in the off season

We drew upon this feedback to develop a final set of recommendations, which are presented in Table 10. While our findings suggest that community buy-in is essential for all urban farms located in residential areas, the degree to which urban farmers engage local communities will differ based on the goals they have for their farm. Therefore, these recommendations are not intended to be a checklist that is applied to every urban farming project, but rather a full spectrum of strategies for urban farmers to draw from when

designing a process for community buy-in. Additional details on each recommendation are provided elsewhere (see Poulsen & Spiker, 2014).

Table 10. Summary of recommendations for gaining community buy-in for urban farming

Phase 1. Gaining entry into a neighborhood	
A.	In choosing a farm site, ensure that local residents do not use the space for other purposes (e.g., family gatherings, parking, playfields) and that it provides an opportunity to improve blighted land.
B.	Take steps to gain an understanding of the neighborhood context through such approaches as reaching out to neighborhood leaders, going door-to-door to speak with residents, and attending community meetings.
C.	Avoid assumptions about what local residents desire and take steps to identify ways the urban farm can provide services that they value by speaking with a variety of community leaders and residents.
D.	Forge relationships with community leaders or groups that can champion the idea for the farm and assist urban farmers in understanding the neighborhood context and how to incorporate goals into their project that are meaningful for residents.
E.	Avoid perceptions that an urban farm is an "outsider project" by demonstrating dedication to the neighborhood through active community involvement, such as by attending community association meetings, hosting community events, partnering with local institutions, or informally engaging with residents.
Phase 2. Introducing the idea for an urban farm	
F.	Include local residents in the planning process for a new urban farm through such forums as community meetings or individual conversations with residents living in proximity to the potential farm site.
G.	Demystify urban farming by sharing examples of other urban farms via photographs and tours.
H.	Proactively address common concerns about urban farming, including rats, vandalism, soil contamination, and food safety and sanitation, and explain potential benefits for the local neighborhood.
I.	Use multiple forums to present the idea for the urban farm, including community meetings and engaging residents who live in direct proximity to the potential farm site.

Phase 3. Engaging the neighborhood in the urban farm	
J.	Create a welcoming environment at the urban farm site by engaging passersby, holding events at the farm, creating spaces where local residents can enjoy the green space, and considering ways to involve a diversity of people.
K.	Create a variety of opportunities for residents to be involved, such as an associated community garden, community events, and opportunities for youth.
L.	Provide opportunities for local residents to access farm produce. Consult residents to determine the types of food they prefer and convenient times and locations for distribution, and to ensure food is affordable.
M.	Communicate with residents to encourage their engagement with the farm by distributing flyers, going door-to-door to speak with residents in close proximity to the farm, making announcements at community meetings, or using signage at the farm site.
N.	Maintain and beautify the urban farm to meet residents' expectations for their neighborhood's appearance, including creating a sense of permanence in the space in the off-season (e.g., building structures like sheds and pergolas, planting trees).

4.5 Discussion

In his call for urban agriculture research that is attentive to race and power dynamics, Hoover asks, "Is [urban agriculture] just another form of urban renewal, displacing underprivileged communities in the process, or is it an inclusive practice that works with marginalized people in the remediation of 'their' land?" (Hoover, 2013, p. 112). Our study demonstrates a trend toward the latter. Urban farmers, and particularly urban community farmers, in Baltimore view community support for their projects as crucial and employ numerous strategies to ensure that surrounding communities buy in to the farm.

Using a collective case study methodology facilitated a more comprehensive understanding of the farm-community relationship and the strategies that were successful in building positive relationships. In addition, the inclusion of the "rejected farm" case

revealed what can go wrong during the community buy-in process. In this particular case, the urban farmers did not build relationships with influential community leaders, thus undermining their entry into the community; a few vocal community members' concerns about an urban farm attracting rats to their neighborhood fueled antagonism to the idea; and a community association that is viewed as unrepresentative of the neighborhood was given warrant to disapprove of the idea for an urban farm.

Based on our findings, we have proposed a set of recommendations to facilitate the process of gaining community buy-in for urban farming projects to ensure these projects are accepted and embraced by communities. While the specific recommendations pertain to urban farming, there are several themes that can be gleaned from these recommendations that are applicable to broader community buy-in processes. We discuss these themes below, also highlighting their relevance to similar processes of community participation and community acceptance.

Fairness in the distribution of benefits and drawbacks. Several of our recommendations point to a need for fairness in the distribution of benefits and drawbacks resulting from the development of an urban farm. New projects are unlikely to achieve community buy-in if they are perceived to deal advantages to some community members and disadvantages to others, defined as "outcome favorability" by Gross (2007). For example, when selecting a site for an urban farm (Table 10, recommendation A), if a vacant lot is chosen that is used by some residents—perhaps as a place for family cookouts—they may feel unfairly disadvantaged, negatively affecting their acceptance of the farm.

Fairness is a critical element of community acceptance, as demonstrated by research by Gross (2007) on the siting of a wind farm. She found that outcome favorability influences individuals who have a personal loss or gain at stake, while "outcome fairness"—an assessment of whether the outcome is fair for the community at large—influences those without strong opinions on an issue. Based on our research, we conclude outcome fairness can influence community buy-in if the project implementer is perceived to be the only beneficiary. This highlights the importance of addressing concerns about urban farms and communicating the benefits an urban farm will bring to a neighborhood (recommendation H). It also relates to recommendations to provide opportunities for local residents to access farm produce (recommendation L) and to meet residents' expectations for the farm's appearance (recommendation N) so as to avoid perceptions that the farmer is benefitting from the project at the expense of the neighborhood.

Understanding the community context. The need to gain familiarity with the community context of a neighborhood was a common theme throughout our interviews (Table 10, recommendations B and C). There were many justifications for this need: to address existing challenges or meet residents' desires through the farm's services, to build on existing resources in the neighborhood, and to demonstrate the farmers' interest in creating something of value for the neighborhood. To gain understanding of the local context, the urban farmers in our study forged relationships with community leaders or groups (recommendation D), along with attending community meetings on an ongoing basis and speaking informally with local residents.

Familiarity with the local community is also considered a necessity in community participation. In their seminal work on effective community participation, Bracht and Tsouros (1990, p. 203) suggest that one factor for successful community participation is "early and extensive knowledge of community history, organizational resources, influence structures and inter-organizational networks" and cite the value of community participation as a way of incorporating local values into programs.

Establishing trust in "outsiders." A recurring theme throughout our interviews was the view of urban farmers as "outsiders" who enter a neighborhood to change things, a perception that potentially breeds resistance to an urban farm. This was thought to stem in part from the fact that many urban farmers in Baltimore are white, farming in majority black neighborhoods. In their study of urban agriculture in Philadelphia, Meenar and Hoover (2012) similarly found that due to systemic and historical racism, non-whites are often suspicious of privileged whites coming in to start gardens. They also noted that Philadelphia is defined by class-conscious boundaries, where "any outsider coming into the neighborhood may be perceived as "other" (Meenar & Hoover, 2012, p. 152). This may also be at play in Baltimore, where residents are similarly conscious of neighborhood boundaries.

Urban farmers were able to overcome this perception and gain the community's trust by demonstrating their dedication to the neighborhood, developing relationships with residents, and creating a welcoming environment (Table 10, recommendations E and J). In their study of urban farming in Baltimore, Hu and colleagues (2011) similarly noted residents' distrust of "outsiders," concluding that to achieve buy-in farms should advertise their community-focused mission and demonstrate longevity.

This phenomenon has also been discussed in the community acceptance literature. In their introduction to the concept, Wüstenhagen and colleagues highlight the distrust that can arise when projects are instigated by community outsiders, warning, "trust in their aims, attitude and competence becomes an issue" (2007, p. 2687). And similar to our own findings, in research regarding community acceptance of planned pig production sites, Mann and Kögl (2003) found that the social integration of the farmer is a key factor for public acceptance, particularly if he or she comes from outside the community.

Local involvement in decision-making. One of the strongest themes to emerge from our interviews was the importance of involving residents in decision-making (Table 10, recommendation F). One aspect of such involvement is responding to concerns that arise (recommendation H). Some urban farmers in our study went to great lengths to create opportunities for residents to be involved in decision-making by holding community meetings and consulting residents living in proximity to a potential farm site before ever breaking ground.

Involving communities in decision-making and planning is one of the main approaches to community participation, and the willingness by those in power to involve the community in decision-making is essential to its success (Bracht & Tsouros, 1990; Buchan, 2003). However, scholars also caution against "tokenism" in community participation processes whereby communities are given opportunities to express their opinions, perhaps making the project look more credible in the process, while the "expert" ultimately makes the decisions about project design and management (Buchan, 2003; Butterfoss, 2006). While we found similar concerns, the urban farmers in our study who were committed to community involvement reported creating specific and

transparent opportunities for residents to influence decision-making. In this way, flexibility and open-mindedness on the part of the project implementer can build trust in projects, particularly those started by community outsiders (Wustenhagen, et al., 2007).

Transparency. Transparency emerged as a key component in the community buy-in process for urban farming, exemplified by the fact that the entire second phase of this process relates to open communication. Two dimensions of transparency are relevant: (1) knowing what is meant by "urban farming" (demystifying urban farming, Table 10, recommendation G); and (2) knowing what is being proposed for a specific site (recommendations I and M).

The importance of transparency throughout the process of planning a project is discussed in both the community participation literature and the community acceptance literature. For example, in her study of a wind farm siting, Gross (2007) found that perceived secrecy in the planning of the project was one of the main reasons community members viewed the process as unfair. This points to the importance of transparency in both the consultation process and the plans for a project. Through our research, we found an emphasis on the latter, but not on open communication about the consultation process itself; this may be something that should be considered in community buy-in processes.

Community engagement. A final theme that emerged from our recommendations involves active engagement of the community in the urban farm's activities, as exemplified by the third phase of the community buy-in strategies (Table 10, recommendations J, K, L, M, and N). The buy-in efforts that are needed evolve over time, transitioning from activities that introduce the idea for the farm to ongoing activities that build and maintain relationships between community members and the urban

farming project. Our findings suggest that this relationship is facilitated through community engagement. For example, numerous interviewees formed a positive impression of their neighborhood's urban farm after early involvement in the project, such as attending a farm event or volunteering.

Community engagement is a mainstay of community participation. However, the goal of such engagement is to achieve local action to solve specific problems (Bracht & Tsouros, 1990) as opposed to involvement in project activities for the sake of building a relationship between the project and the community. In the literature on community acceptance, we have not seen discussion of community engagement with a project after the project is established. Thus community engagement in terms of ongoing interaction between local residents and a new project may be a unique aspect of community buy-in.

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In discussing these themes, it is clear that there is significant overlap between processes of community buy-in, community participation, and community acceptance. Is there, then, utility in conceptualizing community buy-in as distinct? We believe there is, and that the difference lies not in the processes that are used, but in the end goals. From an empowerment perspective, the end goal of community participation is that local communities take responsibility for identifying and solving their own problems, while the end goal of community acceptance is agreement, or compliance, with a decision. We see community buy-in as a middle ground in the continuum lying between these two concepts, with the end goal being acceptance and active support by a community for a project or plan. Such support can encompass a broad range of actions, with the minimal level of buy-in equating to community acceptance, all the way to stronger participatory

forms such as involvement and collaboration by communities. In addition, we identify community engagement, in terms of ongoing interaction and relationship-building between local residents and a new project, as a potentially unique aspect of community buy-in.

4.5.1 Study strengths and limitations

Through this research, we aimed to understand the relationship between geographic communities and urban farms and ultimately to determine effective processes for community buy-in. However, a limitation of this endeavor lies in the very use of the term "community," which is notoriously problematic in its implication of cohesiveness. Head (2007, p. 441) best sums this up, stating that the term "glosses over the social, economic and cultural differentiation of localities" implying "a (false and misleading) sense of identity, harmony, cooperation and inclusiveness." The views of our interviewees represent their specific social, economic, and cultural perspectives, inherently excluding others. Given the diversity of views present in any group, gaining the support of all members of a neighborhood for an urban farming project is an ideal rather than a reality.

One group whose input we were not able to incorporate is residents who are antagonistic toward the establishment of urban farms. Future research that elucidates the reasons for opposition to urban farming would strengthen our understanding of the community buy-in process. However, we were only able to identify one individual who was reportedly opposed to urban farming, and this individual was not interested in participating in this research; this may reflect a general lack of opposition to urban farming. The residents we interviewed frequently had an interest in urban agriculture or

had established a relationship with the urban farm in their neighborhood and so were interested in the research topic, leading to rich and insightful interviews.

As with all qualitative research, it is important to consider contextual factors when transferring the findings of this study to settings beyond Baltimore. Baltimore is characterized by an overabundance of vacant land and widespread inaccessibility to fresh produce in poor neighborhoods, both of which drive grassroots enthusiasm and political will to support urban farming. However, based on the strength of our study methodology—including the inclusion of multiple cases, the triangulation of data and sources, and the integration of feedback received during the dissemination meeting—we are confident that the proposed recommendations provide a springboard for developing community buy-in processes that are tailored to meet the needs of a variety of urban farming models.

Future research on this topic should consider drawing from the experience of other types of small businesses in gaining community buy-in. Literature on the success of small businesses recognizes community buy-in as a criterion for success (Kilkenny, Nalbarte, & Besser, 1999), and businesses themselves appreciate the importance of contributing to the public good above and beyond the goods and services they sell (Besser, 1999). Though community urban farms more aptly parallel community-based nonprofit organizations, commercial farms may have more in common with other small businesses.

4.6 Conclusion

As urban farming continues to expand across the U.S., it is increasingly important to help farmers engage local communities so as to develop projects that thrive in the complex

social landscape that defines urban farming. This includes supporting urban farmers as they work to balance the need to build strong relationships within the neighborhoods that host their projects while meeting the demands of production-level farming. Toward this end, the recommendations we propose provide a variety of strategies urban farmers can draw from when designing a process for community buy-in. In addition, we contribute a starting point for defining effective processes for gaining community buy-in within the context of health and social justice programming more broadly.

Chapter 5. "The contribution of urban farming to neighborhoods: A model of understanding among city residents"

5.1 Abstract

Growing policy and programmatic support for urban farming—a type of urban agriculture characterized by a focus on income-generating agricultural activity—reflects recognition of the range of benefits it may provide, though these are not well delineated in the research literature. Through a qualitative case study conducted in Baltimore, Maryland, we developed a model of understanding regarding the benefits urban farms provide to cities. Interviews with city residents, neighborhood leaders, and urban farmers in two neighborhoods with established urban farms, two with planned farms, and one with a rejected farm proposal revealed the numerous pathways by which community members view urban farms as improving neighborhoods, depending on the type of farm. Stemming from the creation of projects that welcome public involvement, urban *community* farms were thought to increase social connectedness in neighborhoods. Urban *commercial* farms create local businesses, leading to potential employment opportunities. Both farm types physically improve degraded space and produce local food, leading to an array of perceived benefits related to the positive transformation of the physical landscape, improved perceptions of a neighborhood's reputation, increased access to fresh produce, and educational and youth development opportunities. These benefits can contribute to conceptual influences on neighborhood improvement, including neighborhood attachment, neighborhood confidence, food access, agricultural literacy, food citizenship, youth development, and economic development. Our model presents a framework for evaluating urban farming that accounts for this multifunctionality.

Building upon this model, social and environmental accounting may provide a novel process for holistically relaying the benefits and successes of urban farms.

5.2 Introduction

An expansive literature base highlights the health, social, economic, and environmental benefits associated with urban agriculture in the U.S. and other high-income countries (e.g., see reviews by Draper & Freedman, 2010; Golden, 2013; Okvat & Zautra, 2011). The majority of past research has focused on urban gardening, and specifically, community gardening (Golden, 2013); few studies have looked at benefits associated with urban farming (differentiated from urban gardening by its focus on income-generating agricultural activity). This research gap aligns with historic trends in urban agriculture—far more people participate in urban gardening, and municipalities have only recently distinguished urban farming in zoning code definitions and programmatic support (Goldstein, Bellis, Morse, Myers, & Ura, 2011). However, as urban farming gains traction as a tool for urban revitalization, additional research on its impacts is warranted.

In the last decade, urban farming has seen growing support and expansion in the U.S., including in Baltimore, the site of this study. Fifteen urban farming projects have started in Baltimore since 2010 (Maryland Food System Map Project, 2014), supported in part by the municipal government through an update to its zoning code and several new initiatives, including one that leases vacant city-owned land to experienced farmers (Baltimore Office of Sustainability, 2013b). Such support is driven by a desire to increase the availability of fresh produce in food desert neighborhoods and productive use otherwise vacant land, but also reflects recognition of the contribution urban farms can

make toward neighborhood improvement (Baltimore City Department of Planning and Department of Housing and Community Development, 2013), contributions that are not well delineated in the research literature.

Within the community gardening literature, qualitative research has elucidated urban gardeners' motivations and barriers to participation (e.g., Birky & Strom, 2013). An important contribution of this work is the development of conceptual models depicting the perceived benefits of community gardening (e.g., Poulsen, Hulland, et al., 2014). To our knowledge, such models do not currently exist for urban farming. To fill this gap, we conducted a qualitative case study in Baltimore, Maryland to explore local perceptions of urban farming. Through participant observation and semi-structured interviews with Baltimore residents, neighborhood leaders, and urban farmers in two neighborhoods with established urban farms, two with planned farms, and one with a rejected farm proposal, we sought to characterize the ways in which community members view urban farming as contributing to neighborhood improvement. Though interviewees also raised concerns about urban farming (see Poulsen & Spiker, 2014; Poulsen, Spiker, et al., 2014), in this paper we focus on the perceived benefits. Isolating these benefits can help develop indicators for evaluating urban farming, ultimately providing insight as to how to promote the practice in a manner that resonates with local communities.

Though an imperfect dichotomy, Baltimore city characterizes urban farms as *community* farms (driven by social goals) or *commercial* farms (production-focused) (Baltimore Office of Sustainability, 2013b). This study included both type of farm, allowing us to capture the unique contributions from each farming model. Based on our

findings, we present a local model of understanding regarding the perceived benefits urban farming provides to city neighborhoods.

5.3 Methods

To facilitate an in-depth exploration of several urban farms and the surrounding communities, this study employed a qualitative case study design. Cases included five residential neighborhoods in Baltimore, Maryland associated with existing and planned urban farms. By including farms in different stages of development we were able to incorporate the views of community members who had observed changes in their neighborhood following the establishment of an urban farm, and of community members who anticipated having an urban farm in their neighborhood. The Johns Hopkins Bloomberg School of Public Health Institutional Review Board approved this study.

5.3.1 Urban farm study sites

The cases included in this study were comprised of residential neighborhoods where there was either an "active," "new," or "rejected" urban farm (Table 11). The cases included three community farms and two commercial farms.

Table 11. Urban farming case types

Case Type	Description of Case	Number of Sites
Active Farm	Fully operational urban farm (for at least one year) and the surrounding neighborhood	2
New Farm	Vacant lot where a new urban farm was planned and the surrounding neighborhood	2
Rejected Farm	Neighborhood in which a proposal to start an urban farm on a vacant lot was withdrawn based on objections by residents	1

Neighborhoods were mostly low-income, with a greater proportion of residents living below the poverty line (between 21% and 37%) than in Baltimore as a whole (18%). The majority of residents living in our study sites were black (ranging from 79% to 97% of the neighborhood's population, compared to 64% of all Baltimore residents) (Baltimore Neighborhood Indicators Alliance, 2014).[4]

5.3.2 Data collection

The first author and two trained research assistants collected data from October 2012 to October 2013. In order to elucidate community views regarding the contribution of urban farming to city neighborhoods, we conducted in-depth interviews with adult residents and neighborhood leaders from the study neighborhoods, and urban farmers associated with each site. Farmers and neighborhood leaders (generally, leaders of neighborhood associations) were purposively selected for participation. Residents were selected through snowball sampling, with farmers and neighborhood leaders providing initial contacts. Interviewees received $US20 for participating. Interviews were semi-structured

[4] Income data is from 2011; race/ethnicity data is from 2010.

following prompts from an open-ended discussion guide that was refined over the course of the study to follow-up on emergent themes. Resident interviewees also completed a demographic profile at the end of the interview. Interviews lasted approximately one hour and took place at a location of the participants' choosing. Interview participants provided verbal informed consent prior to participating in the study.

We also observed active farms and viewed the vacant lots where proposed farms were to be located. This provided a contextual understanding of our research sites and of how urban farms alter neighborhoods. These observations were part of a broader participant observation component of our data collection that is described elsewhere (see Poulsen, Spiker, et al., 2014).

5.3.3 Data analysis

Interviews were audio-recorded and transcribed verbatim and transcripts were pooled by interviewee type. After gaining familiarity with the full dataset, we first examined the pool of resident transcripts, seeking out examples of how each interviewee viewed urban farming as benefitting his or her neighborhood and writing a summary of these findings. Clear themes regarding the benefits of urban farming emerged from this initial analysis. We labeled the emergent themes and then coded each transcript summary using these labels. We then applied the same process of reading transcripts, summarizing findings related to urban farming benefits, and coding the summaries to the neighborhood leader and urban farmer transcripts. Last, we synthesized the data for each code, pulling out illustrative quotes.

We constructed a model depicting the perceived contributions of urban farming to neighborhood improvement based on findings from the resident and neighborhood leader

interviews; findings from the urban farmer interviews were used as a point of confirmation/contrast. Some resident and neighborhood leader interviewees were not knowledgeable about their neighborhood farms' operating models (particularly within the "new" and "rejected" farm cases). Accordingly, some of the data feeding into the model represents community members' expectations regarding urban farming, whereas some is more experiential. Building the model entailed an iterative process that began as soon as we started summarizing resident transcripts. The model continuously evolved throughout data analysis. Once we had developed a nascent model, we created a matrix that compared findings from interviewee types and site types (commercial vs. community farms) for each of the identified themes. Using this visualization of the data, we finalized the overall structure of our model and determined whether there was sufficient basis (i.e., discussed by more than just a couple of interviewees) for including each construct in the final model.

5.3.4 Data quality

To enhance the rigor of this research, we applied the quality criteria of credibility and transferability, as defined by Lincoln and Guba (1985). In terms of credibility, the in-depth study of multiple cases led to a rich conceptual understanding of how community members perceive urban farming to benefit their neighborhoods. Triangulation of the data through the use of multiple interviewee types further strengthened our confidence in having obtained a comprehensive understanding of these views, as did conducting data collection over the course of a year and spending time observing the study sites. As to the transferability of this research, we collected quantitative demographic data to describe characteristics of resident participants. Additionally, we present details throughout our

methods and results related to the neighborhood conditions to better contextualize urban farming in Baltimore.

5.4 Results

We conducted 41 in-depth interviews, including 21 residents, 12 neighborhood leaders, and eight urban farmers. Demographic details were collected for resident interviewees (Table 12). The majority were female, black, homeowners, and had lived in their neighborhood an average of 18 years. They generally had greater educational attainment than the broader neighborhood.

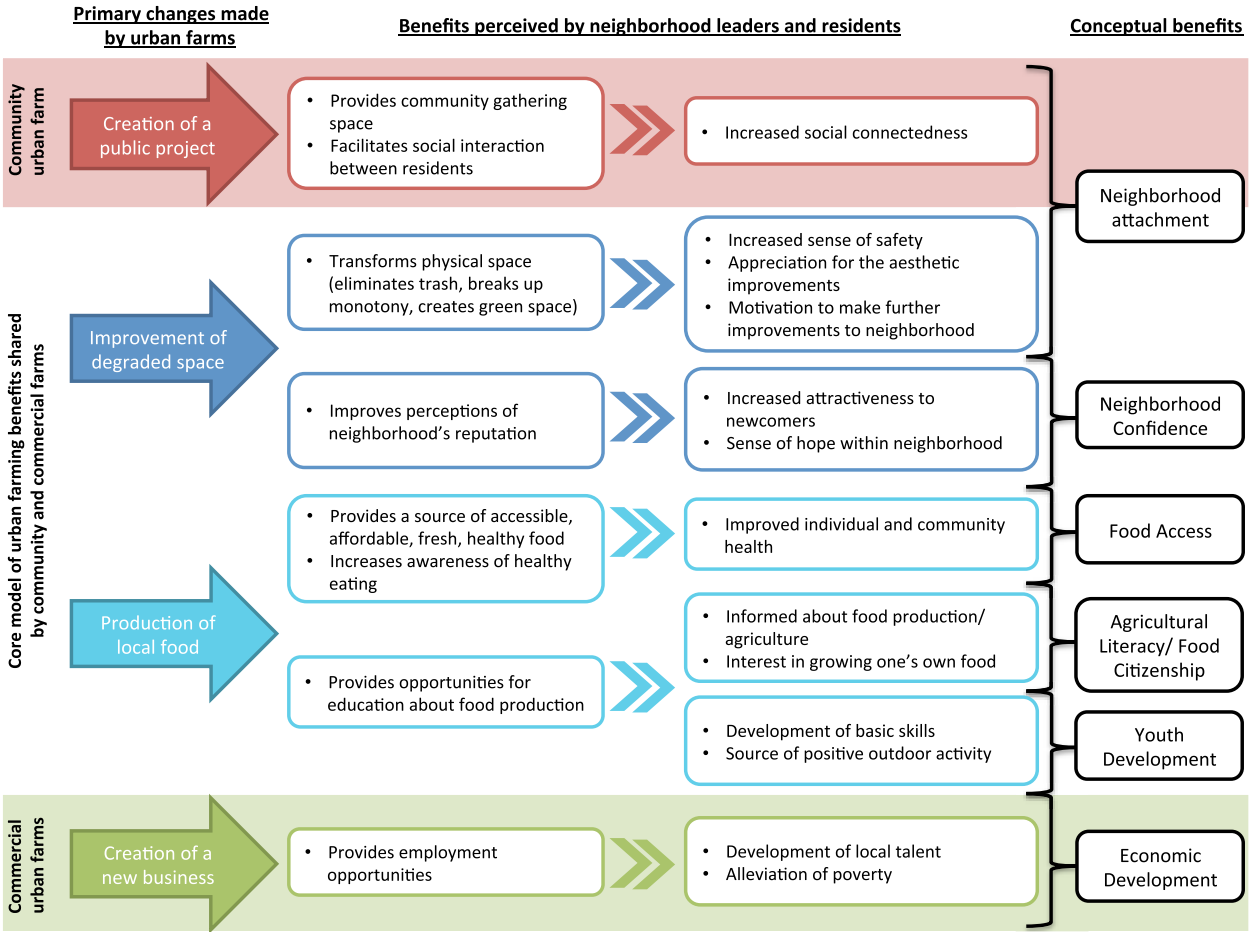
Table 12. Demographic details from resident interviews

Case type	Community farms (n=12)	Commercial farms (n=9)
Sex	67% female 33% male	56% female 44% male
Race/ Ethnicity	75% Black 25% White 0% Hispanic	56% Black 33% White 11% Hispanic
Age	Range: 22-72 Average: 57	Range: 28-65 Average: 42
Education	8% < high school 33% high school/GED 33% associate/ bachelors 25% graduate degree	0% < high school 67% high school/GED 11% associate/bachelors 22% graduate degree
Employment status	0% unemployed 67% employed (part or full-time) 33% retired	11% unemployed 78% employed (part or full-time) 11% retired
Home ownership status	67% owners 33% renters	67% owners 33% renters
Years lived in neighborhood	Range: 1-59 Average: 21	Range: 1-47 Average: 15

Based on findings from interviews with residents and neighborhood leaders, we constructed an emic (i.e., local) model that depicts the perceived contributions of urban farming to neighborhood improvement (Figure 1). Findings from interviews with urban farmers provided points of confirmation/contrast and are integrated throughout the results. The central area of Figure 1 illustrates the core model through which urban farming was viewed as contributing to neighborhood improvement, irrespective of farm

type. Community and commercial farms were each found to contribute unique benefits; these are depicted as additions at the top and bottom of the model, respectively. The first column in the model depicts four primary changes the study team observed urban farms make to neighborhoods; these form the organizational basis for the study results. The second and third columns include the perceived benefits of urban farming described by interviewees. The last column depicts associated conceptual benefits that represent pathways to neighborhood improvement, on which we elaborate in the discussion.

Figure 5. Local model of the perceived contributions of urban farming to neighborhood improvement (based on findings from Baltimore, MD)



5.4.1 Creation of a public project

We observed that urban *community* farms alter a neighborhood by creating public projects that welcome involvement by local residents. A sense of inclusiveness was created because the farms were outdoors, unfenced, and included open space (in contrast, some urban farms are solely comprised of hoop houses) as well as components intended to create a welcoming environment, such as informational signs and benches. In addition, these farms hosted community events and other activities intended to engage the neighborhood.

Numerous resident interviewees commented that the local urban farm "brings the community together," reflecting a greater sense of connectedness within the neighborhood. We found that by welcoming public interaction, the community farms provided a central gathering space for community members and facilitated social interaction between residents. Our observations reveal informal interactions constantly occurring at these farms, with residents often stopping to chat with the urban farmers. In addition, interviewees reported that community events held at the farms—such as weekly farm stands, cookouts, and festivals—got residents outdoors and brought them together.

> *When I've gone up [to the farm stand] on Saturday, I meet the same neighbors that I enjoy being with. … [W]hen you go there, you're going to have great conversation—people you could walk back to the house and have a cup of coffee with… – Resident, community farm*

Beyond creating space for neighborhood residents to interact socially, several interviewees reported that the presence of an urban farm sparked communication between residents. As one interviewee explained, it gives the community "something that they can talk about, something that people have in common in the community."

5.4.2 Physical improvement of degraded space

We observed that all of the urban farms included in this study physically improved degraded space by using (or planning to use) trash-filled vacant lots. Many of Baltimore's neighborhoods suffer from widespread vacancy—it is not uncommon to see blocks of boarded up homes punctuated by vacant lots. Concomitantly, one of the strongest themes to emerge from this research was the appreciation residents have for the improvement urban farms make to a neighborhood's physical environment. Interviewees lauded the use of vacant lots—frequently described as "eyesores"—for something productive.

> *[I]t was a very exuberant feeling… to see something like that happening in the area, because before it was just an empty plot of land and when that happens there's always an accumulation of garbage, bottles, and things of that sort so just to see a group of people really energized to change it and to also not only do it for themselves but to give back to the community. – Resident, community farm*

Interviewees also commented that vacant lots are sites of crime and drug use, so cleaning them up makes the neighborhood feel safer, as does changing a passive space "into an active space where people are doing things throughout the day." Events held at urban farms also served to create a sense of safety:

> *There was a film screening that [the farmer] had, and it was well into the night, in that lot, where again, people probably would expect bullets flying every night. … And there were a group of people watching this big film in complete darkness in the middle of Baltimore. It was just a very supernatural experience. … I think it changed the neighborhood in that people are a lot less scared, a lot more engaged. – Resident, community farm*

Another improvement described by residents was a change in a monotonous urban landscape, providing "something different to look at" other than the endless stretches of row homes that characterize Baltimore's neighborhoods. Others welcomed

the creation of additional green space, describing it as having a soothing effect that can create "a vibe of peace" in the neighborhood.

> *It just makes people feel good. People say they like to walk by and—it's something different to look at other than trash and vacancy. They get to see something grown, and then die, and it's always changing. – Urban farmer, community farm*

This is not to say that residents did not have qualms about the appearance of urban farms. A common concern about urban farming was the maintenance and aesthetics of the farms, a finding described in more depth elsewhere (Poulsen & Spiker, 2014; Poulsen, Spiker, et al., 2014).

The physical transformation urban farms make to neighborhoods was also thought to motivate residents to make further improvements in the neighborhood. Interviewees said that having an urban farm in the neighborhood makes people proud of their community and provides a "contagious sense of what's possible," inspiring residents to pick up trash, take on other vacant lot improvement projects, and improve their own properties.

> *I think [the farm] offers possibilities for the future that things may not necessarily have to be so bleak, and that there are alternatives [to] just accepting what is in place … I think maybe it offers hope. – Resident, community farm*

The physical improvement of degraded space also appeared to improve residents' perceptions of their neighborhood's reputation and appeal. Resident interviewees welcomed an urban farm as something unique in the neighborhood, noting that urban farms are "hip" and would "liven" the neighborhood up and "give it an edge." One resident commented that the addition of an urban farm "lets people know that people in the community are actually doing something here." Another explained the local farm

"boosts up the name of the neighborhood." Several interviewees saw an urban farm as symbolic of a neighborhood's revitalization.

> *It was almost like a religious experience to eat tomatoes out of the area where I remember I drive my husband to first look at the house… And he was scared to even go there, to get out of the car. Let alone buy something and invest our life savings in it. And the thought of eating tomatoes, like something as delicate and intimate. …it's a completely revolutionary experience in that sense. – Resident, community farm*

Some interviewees thought the novelty of an urban farm—along with opportunities to purchase fresh produce—would attract new residents to the area. They welcomed newcomers who could help fill vacant properties, bring in younger generations, and generally "build the community up." However, not all residents welcome such change—one neighborhood leader noted that some residents are wary of the outside visitors attracted by his neighborhood's urban farm, as they have the sense that "things are changing without their consent."

We also found that the introduction of an urban farm can inspire hope among residents. One neighborhood leader described the farm in his neighborhood as a "ray of hope" that "things are happening here, things are changing" in a place where "there's so many negative things that are going on." Residents described urban farms as "uplifting" the community by showing that someone cares about the neighborhood, that "we weren't forgotten." As one interviewee put it, "When you see something that's being turned from being destructive into something that's being productive, it kind of raise your spirits a little more."

> *[I]t's gonna take the area that looked degraded, it's gonna make it look like it's productive. … [I]t don't look like we just letting it wear away and wear down and not doing anything with it. You know, we're doing something with it that's positive and for the growth and the development of the community... – Resident, commercial farm*

5.4.3 Production of local food

By definition, all of the urban farms in our study grew (or planned to grow) food. Interviewees viewed the production of local food in a neighborhood not only as providing a source of fresh produce, but also as bringing educational opportunities related to food production.

A source of produce

Not surprisingly, interviewees across sites said that having a source of fresh fruits and vegetables is one of the most important contributions urban farms can make to neighborhoods. Four key themes arose regarding food access: physical access, affordability, nutritiousness, and preference.

Physical access. Many interviewees noted the dearth of fresh produce in their neighborhoods and were excited to have an opportunity to purchase fruits and vegetables locally. Some interviewees acknowledged the importance of having convenient access to fresh produce for individuals without transportation.

Nearly all of the neighborhood leaders and residents we interviewed assumed that at least some portion of the food grown at an urban farm would be available to local residents. This assumption was even made at sites where there were no opportunities for residents to purchase food. Community farmers went to great lengths to provide local residents opportunities to access farm produce through onsite farm stands, community supported agriculture programs, mobile markets, and sales through local corner stores. One active farm also routinely gave out samples of farm produce at community events and to residents passing by the farm, while the other offered produce in exchange for volunteer hours. Farmers from the urban commercial farms in our study viewed food

access as an important goal of urban farming, but did not necessarily plan to provide food directly to the neighborhood, citing the difficulty in selling food at prices residents can afford while running an economically sustainable business.

Affordability. The community farms strove to keep the farm food affordable to local residents by keeping prices at their neighborhood farm stands comparable to the price of supermarket produce and accepting federal food aid benefits. In contrast, several of the commercial farmers we interviewed noted that because they strive for economic sustainability, they cannot sell their produce at prices that low-income residents can afford. Instead, they grow products with a high profit margin that can be sold at higher prices to customers such as high-end restaurants.

> *No, you can't grow food on two acres of land or less or anything like that and sell it to poor people without tweaking the market. ...without [entitlement programs] ... or the farmer has to be grant funded... To make it on a few acres of farm you gotta grow the most expensive delicacies you can do and you'll still just get by. – Urban farmer, commercial farm*

Neighborhood leader and resident interviewees did not discuss the cost of urban farm food, although a few commented that access to the farm food would benefit neighborhood residents who could not afford supermarket produce.

Preference. Interviewees displayed a preference for urban farm food, using words such as "fresh," "delicious," and "real" to describe the food. Interviewees equated urban farm food with tasting better since it is "homegrown" and valued its freshness, contrasting it with the food available in local supermarkets.

> *[The neighborhood is] getting to have fresh produce. You know, that shit matters, 'cause [the local supermarket] doesn't give us fresh produce. This shit old as shit. You go in there and you might find there a spoiled head of lettuce... – Resident, commercial farm*

Nutritiousness. Interviewees also described urban farm produce as healthy, both because it provides a healthier option than the fast food restaurants that dominate the food landscape, and because they viewed it as more "natural" than conventional produce since it is grown without the use of chemical inputs such as pesticides. The availability of locally produced food was also seen as increasing awareness of healthy eating and potentially affecting food choices. In this way, urban farms were seen as a "platform" for getting people thinking about nutrition that could ultimately lead to a greater demand for more healthy food options in neighborhoods.

5.4.4 Education about food production

By producing food within city neighborhoods, urban farms expose residents to agriculture and provide opportunities to learn about food production. The urban farms in our study provided educational opportunities formally (e.g., through gardening workshops and afterschool gardening clubs for youth) and informally. For example, one farmer interviewee explained how the price of the farm food becomes a "free lesson" regarding sustainable agriculture:

> *[W]e're a non-profit, we could ask for money and give food away but we want to show that there is value to the food and we want that conversation of "hey why are your prices so high?" so we can talk about how much labor we need to use because we don't use pesticides or herbicides and that we actually pay our laborer a living wage. ... So even if I don't make a sale but I have that conversation with somebody, that's… accomplishing our mission. –Urban farmer, community farm*

Interviewees commented on the importance of city residents getting "in tune" with agriculture and seeing "what it takes to grow food." Exposure to agricultural processes was thought to be particularly important for youth. Interviewees discussed the

need for children to see where food comes from and learn about "how things grow," as well as the benefit of experiencing these processes first-hand.

> *[I]t's good for them to know that the vegetables you get have been in the dirt SOMEWHERE down the line. YOU might not have pulled it up, or whatever, but they didn't just pop out of the dirt, they was planted somewhere. But now they just bring 'em to the market …so they really don't know [where food comes from]… – Resident, community farm*

> *I think one of their favorite things at the farm is seeing the compost. And starting to understand that the applesauce that they dumped in a bucket is becoming soil. And that that is helping vegetables grow. … they learn about all these things in books in the classroom, but then to be able to really see and experience that process reinforces it in a way that you just can't do with a book. – Neighborhood leader, community urban farm*

Interviewees also saw urban farms as providing opportunities to learn about how to grow one's own food. Some residents had learned about gardening by participating in one urban farm's associated community garden. Residents at another site said the knowledge base of the staff, the diversity of crops grown at the farm, and the convenience of being able to stop by the farm and ask questions made the farm a good place to learn to grow food.

Beyond lessons in food production, interviewees saw urban farms as providing opportunities for general youth development. The farms in our study engaged youth through activities such as afterschool gardening clubs, school field trips, and family-friendly festivals. Some farms had become hangout spots for local youth. One resident talked about how involvement at the local urban farm had built confidence in the neighborhood children that translated to other areas of life, such as success in school, remarking, "instead of destroying stuff, they want to build stuff." Several interviewees thought an urban farm could provide a source of service learning hours or summer employment for older youth, and that it provided a way for youth to develop skills, not

just in agriculture, but basic job skills. Some interviewees saw urban farms as a source of positive activity for youth, a way of occupying them and keeping them out of trouble, particularly during the summer when school is out and youth have few other recreational opportunities. Others saw urban farms as providing a way for youth to spend time outdoors, particularly in neighborhoods where there are not other outdoor spaces to play.

> *Young people did not look at the outdoors as a positive thing. It's not a clean place. It's not a safe place. … So you do not think necessarily about your food coming out of the ground. … kids are learning things [at the urban farm] about compost. They're learning things about recycling, they're learning things about healthy food, they're learning things about gardening. They're learning things that change their perception of what the outdoors are like, and what their opportunities in the outdoors are. – Neighborhood leader, community farm*

5.4.5 Creation of a new business

A unique change that we observed urban *commercial* farms make to neighborhoods is the creation of a new business. Resident and neighborhood leader interviewees from commercial farm sites mentioned employment as a benefit of urban farming, although the commercial farmers we interviewed were most strident in their views. Several saw great potential for employment through urban farming. One farmer envisioned hundreds of living-wage jobs being created by utilizing much of the vacant land available in Baltimore for intensive urban farming. Two other commercial farmers saw urban farming as a cornerstone in the development of a local food system, which they associated with substantial employment potential.

> *And this is why I'm more interested in for-profit farming because I think that the value that urban farms can bring to the city is not just the food that it harvests, but I think that there are a thousand jobs that we could create if we were serious about local food production. – Urban farmer, commercial farm*

In contrast, the community farmers we interviewed questioned the ability of urban farming to provide significant employment opportunities. One farmer said that the small plot on which her farm is located does not require enough labor to justify hiring more than one person. Another explained that economic sustainability is not compatible with a diversified vegetable farm model. According to this farmer, the best way to make money from urban farming is to grow products with a high profit margin. However, this type of model does not meet the social goals of community urban farms, such as providing local access to fresh produce. Indeed, one commercial farm in our study exclusively grew salad and cooking greens to sell primarily to high-end restaurants, crops that grow year-round in hoop houses in Maryland's mild climate.

Importantly, the commercial farmers we interviewed saw the potential for employment through urban farming as a critical aspect of neighborhood improvement. For example, the developers of one commercial farm had a social goal at heart, hiring individuals who were formerly incarcerated:

> *I feel urban farming should really be about this combination of local food production and local talent development. Because if you didn't have that social goal, you might as well be in the country, where it's much easier [to farm]. You don't have to hire from some neighborhood, you don't have to deal with people that are not easily employed. – Urban farmer, commercial farm*

Another farmer addressed the issue of food deserts, arguing that people can live right next to a supermarket, but still be unable to afford the food. "We can't just put nice children's gardens all over the place and pretend that's going to help with anything. We need to create jobs." By providing jobs, commercial urban farms were seen as a pathway toward economic development and poverty alleviation.

5.5 Discussion

The findings of this exploratory case study indicate that, from the perspective of a subset of Baltimore residents and neighborhood leaders, there is a key set of benefits that urban farms can provide neighborhoods, irrespective of the type of farm. These benefits stem from two changes that urban farms make to neighborhoods: the physical improvement of degraded space and the production of local food. A unique characteristic of the community urban farms included in this study—namely, the creation of projects that welcome public involvement—appears to provide additional benefits. In addition, commercial farms offer unique benefits to neighborhoods through the creation of new businesses. Furthermore, as depicted in Figure 1, the benefits described by interviewees have the potential to contribute to several conceptual influences on neighborhood improvement.

5.5.1 Neighborhood attachment

Neighborhood (or place) attachment refers to the positive emotional connections that form between individuals and their social and physical surroundings (Brown, Perkins, & Brown, 2003). A connection to place is important for fostering community involvement, since people are motivated to protect and improve the places they find meaningful (Manzo & Perkins, 2006). As such, neighborhood attachment has been proposed as an important tool for neighborhood revitalization (Brown, et al., 2003). Our findings suggest that urban farms have the potential to increase neighborhood attachment in two ways.

First, by creating projects that encourage public involvement, interviewees perceived urban *community* farms to provide a central gathering space and facilitate social interaction between residents, leading to greater social connectedness within the

neighborhood. Having friendly social relationships with neighbors is, in fact, a fundamental aspect of feeling attached to a neighborhood (Mesch & Manor, 1998; Robert J. Sampson, 1988). Prior research has shown that gardeners report higher levels of neighborhood attachment (Comstock et al., 2010) and that gardens and public green spaces facilitate opportunities for socializing, creating social ties and ultimately a greater sense of community (J. Kim & Kaplan, 2004; Kingsley, et al., 2009; F.E. Kuo, Sullivan, Coley, & Brunson, 1998; Laura Saldivar-Tanaka & Marianne Krasny, 2004). Urban farms appear to provide a similar form of neighborhood environmental change that can create positive connections between individuals and their neighborhoods. In fact, compared to community gardens, in which participation is generally limited to the gardeners, community urban farms may create a greater sense of connectedness within a neighborhood by actively engaging the broader neighborhood through inclusive activities such as seasonal festivals or neighborhood farm stands. Events that promote new ways to experience the physical space (such as the movie viewing at one community farm) may play a particularly important role in connecting residents to the neighborhood, for they allow residents to get to know and value the neighborhood's physical landscape (Brown, et al., 2003) while interacting with neighbors.

A second pathway by which urban farms may enhance neighborhood attachment is through the improvement of degraded space. Prior research conducted in Philadelphia showed that city residents perceived vacant land to negatively affect community well-being by attracting crime and contributing to a sense of fear (E. Garvin, Branas, Keddem, Sellman, & Cannuscio, 2013), and that greening vacant lots improved residents' sense of safety (E. Garvin, Cannuscio, & Branas, 2013). Similarly, our interviewees associated

the physical transformation urban farms make to neighborhoods with an increased sense of safety. Perceived safety is associated with higher levels of neighborhood attachment, as the fear of crime can keep residents from participating in neighborhood spaces and events (Brown, et al., 2003). The Philadelphia study cited above also found that residents perceived vacant land to negatively impact community wellbeing by decreasing their control over the neighborhood environment (E. Garvin, et al., 2013). These residents expressed frustration at not being able to change the physical conditions in which they live. Transforming vacant land into productive space may provide residents with a greater sense of control over the conditions in their neighborhood. For example, our findings reveal that interviewees perceived that the presence of an urban farm motivates residents to make additional improvements to the neighborhood. Community gardens have similarly been shown to motivate broader community improvement (Armstrong, 2000; Teig, et al., 2009; Wakefield, et al., 2007).

Involvement in neighborhood improvement is one indicator of "informal social control," which—along with social cohesion—is a necessary component of collective efficacy. Collective efficacy is "the linkage of mutual trust and the willingness to intervene for the common good" (Robert J Sampson, Raudenbush, & Earls, 1997) and is positively associated with neighborhood attachment (Brown, et al., 2003; Comstock, et al., 2010). Prior research on community gardening illustrates the social processes that cultivate collective efficacy (e.g., reciprocity, collective decision-making, civic engagement) (Teig, et al., 2009), some of which may not be applicable to urban farming. That said, as we have already seen, urban community farms are perceived to contribute to greater social connectedness within neighborhoods. Coupled with the finding that urban

farms can motivate further neighborhood improvement, these results highlight a possible link between urban farming and collective efficacy, and provide further evidence that urban farms have the potential to increase neighborhood attachment.

5.5.2 Neighborhood confidence

Neighborhood confidence, or positive expectations for one's neighborhood, entails judgment about a neighborhood's future and has ramifications for residents' willingness to make investments in their neighborhood (Varady, 1986). Our findings reveal a potential link between the establishment of an urban farm and improved neighborhood confidence. Specifically, interviewees perceived the presence of an urban farm to improve a neighborhood's reputation, potentially attracting new residents and ultimately leading to a greater sense of hope among neighborhood residents. This was partly based on the physical improvement of degraded space that occurs when a farm is established, but also had to do with the "hipness" of urban farming, an idea that was expressed by a demographically diverse range of participants. Such positive expectations for a neighborhood's future indicate a confidence in the viability of a community, which can influence the economic and emotional investments residents are willing to make in their neighborhood. In contrast, residents who perceive their neighborhood to be in decline with little hope for revitalization are unlikely to act individually or collectively to make physical or social improvements (Long & Perkins, 2007). This connection to neighborhood confidence is largely speculative, however, as research on this concept is extremely limited. Future research should examine the determinants of neighborhood confidence and how it is influenced by vacant land improvement strategies such as urban agriculture.

5.5.3 Food access

Study findings reveal that residents and neighborhood leaders consistently viewed urban farms as a way of improving individual and community health in their neighborhoods by providing physical access to food that is perceived to be better tasting and more nutritious than other food options. In addition, the exposure to such food was viewed as an opportunity to increase awareness of healthy eating, with potential impacts on food choices and demand for healthy food outlets. Research from Detroit's D-Town urban farm similarly reveals the farm as an accessible source of information on food and nutrition (White, 2011). Importantly, the D-Town farm, which is run by black activists, delivers information in ways that are culturally relevant for Detroit's predominantly black community. Though we did not explore the cultural bearing of the educational strategies used by the farms included in this study, prior research on urban farming in Baltimore reveals that a lack of cultural saliency of healthier cooking methods can deter the black community from consuming the fresh produce grown on urban farms (Hu, et al., 2011), highlighting the germaneness of the culturally-directed approach of the D-Town farm.

Differing views among urban farmer interviewees regarding the affordability of urban farm food revealed a distinction between the capacities of different farm types. Urban community farmers made efforts to make their food affordable to low-income customers while commercial farmers were forthright in discussing the unaffordability of urban farm food for low-income customers when the aim is to run an economically sustainable business.

5.5.4 Agricultural literacy & food citizenship

Interviewees viewed urban farming as exposing city residents to agriculture, providing opportunities to learn about the provenance of food and how to grow their own food. These responses hint at two concepts related to education about agriculture. The first is "agricultural literacy." This concept arose in response to concern that much of the population has little understanding of the complexity in sustaining a viable agricultural system (Kovar & Ball, 2013), area of knowledge that Mayer and Mayer (1974, p. 84) describe as "basic to [Americans'] daily style of life, to their family economics, and indeed to their survival". In 1988 the National Academy of Science introduced the concept and urged the integration of agricultural education throughout the education system (Frick, Kahler, & Miller, 1991). A recent review of research on agricultural literacy found that many populations remain agriculturally illiterate, and that most projects target teachers and students, potentially excluding important groups such as community members and leaders (Kovar & Ball, 2013). While the concept of agricultural literacy was introduced as an area for classroom learning, experiential learning may reinforce classroom lessons. The community gardening literature is rife with examples of how gardening participation enhances knowledge and skills related to food production and related scientific concepts (e.g., D'Abundo & Carden, 2008; Fusco, 2001; Krasny & Tidball, 2009; Laura Saldivar-Tanaka & Marianne Krasny, 2004). Based on our findings, urban farms also have an important role to play in this endeavor.

A second concept linked to the perceived importance of exposure to agriculture by interviewees is "food citizenship." Food citizenship captures the idea that people have a responsibility to make socially- and environmentally-conscious decisions about the

food they consume (DeLind, 2002). As such, there is a need for "food citizen education" to create a citizenry that is cognizant of the ways public decisions about food can have profound and far-reaching social and ecological impacts (Wilkins, 2005). In particular, emphasis has been placed on educating youth to understand the complexity of the food system and develop the skills to actively participate as responsible food citizens (Wright & Nault, 2013). Similar to other urban agriculture projects described in the research literature (e.g., Travaline & Hunold, 2010), the urban farms included in this study were seen as serving an important educational purpose for residents (particularly youth) who were disconnected from the source of their food.

5.5.5 Youth development

According to interviewees, urban farms also have the potential to contribute to general youth development. The advantages noted by our interviewees mirror findings from prior research on the involvement of disadvantaged youth in community gardening, namely, a positive activity to engage youth and keep them out of trouble, and the development of cognitive and behavioral skills that prepare youth for school and work (J. O. Allen, et al., 2008; Krasny & Doyle, 2002). Research from Detroit's D-Town farm found that the urban farm plays a vital role in creating outlets for youth employment, particularly with the closing of many of the city's recreation centers (White, 2011). An additional finding from our research is that urban farms can provide a way for youth to safely spend time outdoors in neighborhoods where green space may not be otherwise present, potentially changing negative perceptions held by city youth about the outdoors. This has important implications for youth development since prior research has indicated that contact with

vegetation can improve the cognitive functioning of youth (F. E. Kuo & Taylor, 2004; Taylor, Kuo, & Sullivan, 2002).

5.5.6 Economic development

In terms of economic development, the findings from this study reveal that commercial urban farmers were highly optimistic regarding the job opportunities that urban farms can provide in a city like Baltimore. These farmers were striving to create an economically sustainable model of farming. Anecdotes of urban farms that provide living wages to residents have been previously documented in the literature (e.g., Ferris, et al., 2001) and feasibility studies have reported significant potential for the profitability of urban farming in some settings (Global Green USA, 2012). Some residents and neighborhood leader interviewees also mentioned employment potential as a benefit of urban farming, but other benefits appeared to be more salient (e.g., cleaning up degraded space, improving the community's reputation). In contrast, community urban farmers we interviewed questioned the ability of urban farming to provide jobs and the economic sustainability of urban farming, though this likely reflects their approach to urban farming, which prioritizes social goals such as education and providing local food access.

5.5.7 Study implications

Other scholars have acknowledged the difficulty in justifying the use of urban land for agriculture based only on the potential to produce food (Gerster-Bentaya, 2013; Lovell, 2010). Compared to the production efficiency of rural and peri-urban farming, urban farming cannot compete (save, perhaps, on a few specific products), nor does it make sense from a development standpoint to use limited city space to grow food. As Lovell (2010) has concluded, and what our model unequivocally demonstrates, is that the value

of urban farming should not be assessed without incorporating the "multifunctionality" that accounts for the many services it provides. Our model presents one such framework, providing a roadmap for the development of indicators to measure the benefits of urban farming. It represents the general pathways that are typically possible for urban farming, though individual farms do not always fit the model. For example, not all farms will make food available to local residents, nor will residents always perceive the physical changes made to a space as attractive. This is not surprising, given the great diversity in urban farming models and in community needs.

The process of social and environmental accounting (SEA) is a potentially novel way of relaying the benefits and success of urban farms. SEA is "the process of communicating the social and environmental effects of organization's economic actions to particular interest groups within society and to society at large" (Gray, 1996, p. 3). It extends the accountability of organizations beyond economic measures of success and reflects their responsibility to undertake social and environmental actions (Gray, 1996). Our model demonstrates numerous potential indicators of success for urban farming.

SEA reports generally contain both quantifiable and descriptive information. As an example of a social impact, urban farmers might report the ways a farm serves as a community gathering space both formally (e.g., the number of community events held at the farm, the number of attendees), and informally (e.g., observations of interactions between urban farmers and passersby). Similar indicators could be created based on each of the pathways delineated in our model. In addition, though not mentioned by our interviewees, several environmental indicators could be incorporated, including the

provision of various ecosystem services such as organic waste recycling and habitat creation for pollinators.

SEA is generally used to communicate an organization's non-economic effects to funders and shareholders; however, we see it as presenting a holistic accounting approach for urban farms that could also benefit farmers and local community members. For urban farmers, such reporting not only allows them to assess their impact on the local community and environment, it can also increase their legitimacy among community members and thereby strengthen community buy-in, an important aspect of maintaining a viable urban farm (Poulsen, Spiker, et al., 2014). For community members, such reporting provides greater transparency by which to assess an urban farm's contribution to their community.

As with all qualitative research, the study setting shaped the findings of this research, and as such, we present an emic model that is situated in the Baltimore context. Therefore, it is important to consider contextual factors when transferring these findings to other cities. In particular, the abundance of vacant land in Baltimore simultaneously creates opportunities for urban farming and influences community members' reception to these projects. In addition, characteristics of our study participants—e.g., the fact that the majority were homeowners, or their relatively high education levels—certainly influenced the responses that provide the basis for this model. Yet as one of the first models published in the literature to illustrate the perceived benefits of urban farming to community members and connect these benefits to broader conceptual influences on neighborhood improvement, this study provides several threads for future research to pursue.

Chapter 6. "Cultivating citizenship, equity, and social inclusion? Putting civic agriculture into practice through urban farming"

6.1 Abstract

The guiding principle behind the local food movement, civic agriculture is an approach to agriculture and food production that—in contrast with the industrial food system—is responsive to local environmental, social, and economic contexts. As the local food movement has grown, scholars have raised concerns about how its institutions are put into practice, including issues related to a deflected focus on citizenship, inequity in access to alternative food, and social exclusion. Using a case study approach, I assess the relevance of these critiques to two markedly different urban farms in Baltimore, Maryland—one that emphasizes community engagement, and another that other focuses on economic sustainability. Findings from interviews and participant observation reveal a tension between the prioritization of civic and economic exchange, reflecting the differing goals of the two farms. The first farm emphasizes community participation and food equity, but its long-term viability is dependent on grantee's priorities and commitment of the urban farmers. The second farm focuses on financial sustainability rather than participatory processes and food justice, critical aspects of addressing food system inequities. The two farms differentially create socially inclusive environments. In both cases, findings suggest a lack of interest by residents in obtaining urban farm food, raising concerns about its appeal and accessibility to diverse consumers. Despite limitations of each farming model in fully meeting the aims of the local food movement, these case studies illustrate the ways in which urban farming prioritizes place and ultimately exemplifies the ideals of civic agriculture.

6.2 Introduction

The U.S. agriculture and food system has bifurcated along distinct lines (Grey, 2000; Lyson & Guptill, 2004). On one hand, the industrial food system aims to maximize production efficiency (Lyson & Guptill, 2004). Beyond cheap and plentiful food, the harvests of this system include environmental degradation, poor nutrition, food-safety scares, a loss of family farms, and the distancing of people from food practices and knowledge (P. Allen, 2010). In contrast, civic agriculture—the guiding principle behind the local food movement—encapsulates a locally-based approach to agriculture and food production that prioritizes place—environmentally, socially, and economically (Lyson, 2005).

Civic agriculture manifests through alternative agrifood institutions (AAI's) including direct-marketing schemes such as farmers' markets and community-supported agriculture (CSA), and alternative production modes like urban agriculture and small-scale organic farms (Lyson & Guptill, 2004). These institutions are designed to support small/mid-scale farming while making local food available to consumers, and to educate people of the value of sustainably grown food (DeLind & Bingen, 2008; Guthman, 2011). They also "provide forums where civic farmers and food citizens can come together to solidify bonds of community" (Lyson, 2005, p. 97).

As the local food movement has gained momentum, scholars have considered how the movement may be straying from its original aims, raising concerns about how AAI's are put into practice. I discuss three of these critiques. I then draw upon findings from case study research to examine their relevance to two urban farms in Baltimore,

Maryland, using the critiques as a lens by which to assess the social impact urban farms may have on local communities.

6.2.1 Urban farming in Baltimore

Urban farming is a type of urban agriculture that focuses on income-generating agricultural activity, though many urban farms are driven by social goals and operate as non-profits. In cities across the U.S., urban farming is gaining traction as a way to productively use vacant land while increasing access to fresh produce. In Baltimore, the site of this study, the municipal government supports urban farming through a variety of policies, including adopting the its first urban agriculture policy plan and implementing an initiative to lease vacant city-owned land to experienced farmers (Baltimore Office of Sustainability, 2013a). Baltimore is currently the site of 15 urban farming projects (Maryland Food System Map Project, 2014). As members of the Farm Alliance of Baltimore, many of these projects are united by a commitment to socially, economically, and environmentally just practices (Farm Alliance of Baltimore City, 2012).

Urban farming represents one way to put the vision of civic agriculture into practice. As defined by Lyson (2005), civic agriculture operations are characterized by concern with the quality of products over yield and cost; their small scale, which is generally labor intensive; reliance on site-specific knowledge, rather than standardized practices; and an orientation toward local markets. These characteristics generally apply to Baltimore's urban farms. Members of the Farm Alliance avoid non-organic inputs such as chemical fertilizers and pesticides; the farms range in size from ¼ acre to a few acres and rely upon the labor of a few farmers and volunteers; each farm is managed by a

unique organization or group of farmers; and farm produce is primarily sold through neighborhood farm stands, farmers' markets, and local restaurants.

6.2.2 Critiques of the local food movement

As the local food movement has evolved, scholars have critiqued its development, with a focus on the movement's reliance on entrepreneurial modalities and market-based strategies (Mares & Alkon, 2011). Here I draw upon three (deeply intertwined) strands of these critiques that offer a useful lens for analyzing the social impact of urban farming on local communities.

A focus on economic, rather than civic, exchange

Civic agriculture shifts the focus of food production away from economic efficiency and toward the needs of local growers, consumers, economies, and communities. Agriculture is emphasized as a *civic* issue in its recognition of the importance of direct citizen participation in shaping the food system (Chung, et al., 2005) and "the imperative to earn a profit is filtered through a set of cooperative and mutually supporting social relations" (Lyson, 2005, p. 94). In contrast, the concentration and centralization of the industrial food system leaves little opportunity for public participation in decision-making (Travaline & Hunold, 2010).

In light of this conceptualization, DeLind (2002) describes a troubling trend whereby civic agriculture "is focused most keenly on creating economic infrastructure rather than common inner structure" (DeLind, 2002, p. 222), thereby placing the *civic* aspect of civic agriculture as secondary to private interests. Within this paradigm, institutions such as farmers' markets revolve around private enterprise, success is measured by economic expansion, and "the principal players (however friendly and

personalized) are still producers and consumers; their basic identities are still framed by the economic or commercial transaction" (DeLind, 2002, p. 218). DeLind's concern resides not in the fact that civic agriculture creates opportunities for local commerce, but rather in the eclipsing of civic activities by the "logic of the marketplace."

DeLind (2002) argues that a critical pathway to refocusing on the *civic* nature of civic agriculture is through the development of collective activities that prioritize public interests (DeLind, 2011). Specifically, she describes *public work* as an essential element of the development of civic agriculture. At the center of citizenship, public work embodies the individual sacrifice and relinquishing of self-interests to a common good that creates the sense of community necessary for civic engagement (DeLind, 2002). Importantly, public work is done in *public spaces*, which Chung and colleagues (2005, p. 100) define as:

> *[G]roups that are open to others and serve as a venue for discussion, negotiation, learning, and strategizing about a public problem. …[They] bring together people from different communities who have diverse sets of knowledge, values, and interests. … Thus, public space is not necessarily about a particular place; rather it describes a particular culture of working together.*

Chung et al. (2005) demonstrate that agricultural projects create public space when the work contributes to a common good, when participants are engaged as citizens rather than consumers through collective problem-solving, and when interaction with non-participants is welcomed.

Inequity in the accessibility of alternative food

A second critique relates to the equity of the local food movement, and the ways in which its institutions cater to privileged consumers and exclude the poor and people of color. In the U.S., these groups are more food insecure than others and have lower access to

healthy foods such as fresh fruits and vegetables. In 2013, rates of food insecurity were highest for low-income households (34.8%), and were higher for blacks (26.1%) and Hispanics (23.7%) as compared to white non-Hispanics (10.6%) (Coleman-Jensen, Gregory, & Singh, 2014). Furthermore, research shows that black and lower-income neighborhoods have lower availability of healthy foods than white and higher-income neighborhoods (Franco, et al., 2008).

Scholars argue that without an explicit focus on justice, AAI's may simply serve to placate the privileged, leading to a two-tiered food system in which the non-privileged must cope with the problems created by the industrial food system (P. Allen, 2008; Guthman, 2008a). Although AAI's frequently prioritize food justice, aiming to serve low-income populations, their ability to address food inequity is inherently constrained by the economic structures in which they reside (Alkon & Mares, 2012; P. Allen, 2010). AAI's are most successful when they prioritize issues and products valued by affluent communities (Alkon & Mares, 2012). As DeLind (2008, pp. 128-129) points out, "the market, of itself, does not encourage social equity or democratic participation, but best serves those who are both able and willing to profit and to consume." Despite intentions to effect food justice, the result is that these alternatives are more accessible to the privileged (P. Allen, 2008).

Though limited, research indicates a lack of participation by low-income populations in AAI's. Guthman and colleagues (2006) found this to be the case, despite support among managers of California farmers' markets and CSA for improving the affordability of food sold at these venues. The affordability of the produce was thought to be a determining factor. The purpose of most farmers' markets is to provide farmers with

a regular source of income, so markets are established in areas where demand exists—often, higher income communities (Guthman, 2011). Evidence also shows that in comparison with commodity agriculture, direct agricultural markets are more prevalent in counties with higher median incomes (Lyson & Guptill, 2004). Thus, even when strategies are employed to increase affordability (e.g., through government entitlement programs), they remain geographically segregated.

Social exclusion within alternative agrifood institutions

According to some scholars, people of color are also excluded from participation in AAI's due to the dominance of white culture in the discourse and practices surrounding these institutions. Spaces become coded as white and thereby exclude others both through the physical clustering of white bodies (Kobayashi & Peake, 2000; Slocum, 2007) and through "whitened cultural practices," which constitute "a set of ways of being in the world, a set of cultural practices often not named as 'white' by white folks, but looked upon instead as 'American' or normal'" (Frankenberg, 1993, p. 4). These whitened cultural practices act to shape "environments to produce landscapes that conform … to ideals of beauty, utility, or harmony, values not immediately associated with 'race'…" (Kobayashi & Peake, 2000, p. 394). The coding of AAI's as white can similarly exclude people of color, ultimately constraining the ability of the local food movement to meaningfully address inequality (Alkon & McCullen, 2011; Guthman, 2011).

Several scholars have written about the ways in which AAI's are racially coded as white (Alkon & Mares, 2012; Alkon & McCullen, 2011; Guthman, 2008a, 2008b). Alkon and McCullen (2011) demonstrated how the intersection of whiteness and affluence constructed California farmers' market as sites of race and class privilege, potentially

deterring participation of low-income people and people of color. For example, they describe how high food prices, an emphasis on gourmet food and the romanticizing of European food culture, and an insider ambiance reinforces the whiteness of the North Berkeley farmers' market. They conclude that such markets "emphasize the importance of building community, but are often unaware that they define community in a way that draws in whites while pushing away people of color" (p. 950).

A lack of open discourse about who is missing from AAI's acts to disregard minority participation in the local food movement. Yet even more race-conscious projects tend to be coded as white. Through her research, Guthman (2008a) demonstrated that many food and agriculture social justice organizations appear to lack resonance in the communities in which they are located. In some cases, this is precisely because they are *alternatives*. For example, African Americans in one California community she studied reportedly desired opportunities to shop at conventional supermarkets, not at farmers' markets and through CSA programs.

Scholars have begun to draw attention to social exclusion in urban agriculture. Citing research from Philadelphia and Denver, Hoover (2013) argues that urban agriculture is often a white-dominated practice that primarily occurs in African American and Latino neighborhoods, with little participation from within those communities. He argues that without representation by members of the community in which urban agriculture projects reside, they unintentionally create an environment that excludes people of color, "where white privilege results in the control of land, food production, and any stream of financial capital." (Hoover, 2013, p. 108).

6.3 Methods

This study was part of a larger research project regarding community perceptions of urban farming in residential areas of Baltimore, Maryland. The two farms included in this study were selected from a larger pool of urban farm cases because they offered the richest data. They also provided two markedly different examples of urban farms—one that emphasizes community engagement, and another that other focuses on economic sustainability—facilitating an in-depth understanding of the relationship between urban farms and surrounding communities. The Johns Hopkins Bloomberg School of Public Health Institutional Review Board approved this study.

6.3.1 Data collection procedures

The study author and two trained research assistants collected data from October 2012 to October 2013. We conducted in-depth interviews with the individuals who lead the establishment of each farm (referred to as "urban farmers") (n=6), and with neighborhood leaders (i.e., leaders of community associations) (n=3) and adult residents (n=12) from the surrounding neighborhoods. Urban farmers and neighborhood leaders were purposively selected for participation. Residents were selected through snowball sampling, with farmers and neighborhood leaders providing initial contacts. Interviews were semi-structured following prompts from an open-ended discussion guide. Interviews lasted approximately one hour and took place at a location of the participants' choosing. Interviewees received US$20 for participating. Participants provided verbal informed consent prior to participating in the study. Interviews were audio-recorded and transcribed verbatim.

To gain a contextual understanding of the farms, we conducted unstructured participant observations at each farm (totaling 16 hours), including volunteering at the farms and attending community events held at the farms. Observations focused on the people present, interactions between individuals, and attitudes expressed about the urban farm and its relationship to the neighborhood. Detailed notes were written immediately following each observation. To triangulate interview and observation data, we also collected documents related to each farm (e.g., flyers, list-serve emails, and notes from community meetings).

6.3.2 Data analysis and data quality

Data analysis involved a within-case analysis of the urban farms' social impacts on surrounding communities. To accomplish this, I wrote a case report for each farm, drawing upon interview transcripts, participant observation notes, and relevant documents. I used a deductive coding scheme; codes consisted of themes related to the farms' operations and their relationships with the surrounding community. Coding was done using the qualitative analysis software HyperResearch (ResearchWare Inc., 2012). I then defined a set of queries to analyze the case reports based on the critiques of the local food movement described above (see Table 13).

To enhance the trustworthiness of this research, I applied the quality criteria of credibility and transferability (Lincoln & Guba, 1985). Credibility was enhanced through the use of the case study design, which—through the triangulation of data through the use of multiple methods of data collection and multiple interviewee types—led to a rich understanding of each farms' operations and relationships with the community. Additionally, conducting numerous interviews among different interviewee types over

the course of a year strengthened my confidence in having obtained adequate data saturation. As to the transferability of this research, the thick description of each case provides context for determining its relevance to other settings.

Table 13. Queries made of each urban farm case during data analysis

Critique	Data Queries
Civic agriculture has become focused on economic interests and private enterprise, placing the *civic* aspect of the concept as a secondary concern	• Were farmers motivated to start a farm in order to fulfill personal goals or to work toward the common good? • Is there a common interest between the farmers and local residents (i.e., do local community members view the farm as addressing neighborhood challenges)? • To what degree does the farm's business model emphasize economic exchange/profitability? • What aspects of public work are visible (i.e., work done by a diverse group of individuals acting together for the public good)? • Is non-farmer input welcomed and integrated? • In terms of their involvement with the farm, are residents treated as consumers or citizens?
By operating within the market framework, AAI's cannot address the lack of access to fresh foods by poor people	• Do the farmers prioritize food justice? • How is farm food distributed? Is it accessible and affordable to disadvantaged residents? • Is the type of produce grown selected for its appeal to residents or to high-end markets? • Do local residents participate by purchasing food?
AAI's are socially exclusionary, constraining the ability of the local food movement to meaningfully address inequality	• What efforts are made to make the farm a socially inclusive space? • Are farmers a different race/ethnicity than the majority of residents where the farm is located? If so, do residents consider the farmers "outsiders"? • Are local residents interested in participating in this "alternative" to the conventional food system? • What efforts do farmers make to engage local residents with the farm? • How was the decision made to start a farm in the neighborhood, and who had a voice in this decision?

6.4 Results

Here I describe the two urban farming cases, focusing on details related to the queries outlined in Table 13. I differentiate the cases as the "urban community farm" and "urban commercial farm," labels that reflect each farm's underlying mission. Both farms were established on lots that had been vacant for decades and had become dumping grounds for trash. The neighborhoods surrounding the farms are low-income, with higher poverty and unemployment rates than Baltimore as a whole (Baltimore Neighborhood Indicators Alliance, 2014). They both rank "below average" on adults' level of education, the community built environment (measured by liquor store and tobacco retail density), community social environment (i.e. violence and arrest rates), and vacant building density (Ames et al., 2011). Furthermore, the areas surrounding both farms are considered food deserts[5] (Baltimore City Department of Planning, 2012).

6.4.1 Case 1: Urban community farm

Tucked away on a quarter-acre lot on the side streets of a centrally located neighborhood, this diversified vegetable farm includes a hoop house, outdoor crop rows, and a small orchard. At the time of this study the farm had been in operation for two years. The white farmers are not from the predominantly black neighborhood; they located the farm there because it had a "solid neighborhood feel" with a lot of "porch culture." The farmers were motivated both by the challenge of farming within the space constraints of the urban environment as well as a moral sense of food equity. One farmer recounted that it felt

[5] Defined as an area where the distance to a supermarket is > ¼ mile, the median household income is at or below 185% of the Federal Poverty Level, over 40% of households have no vehicle available, and the average Healthy Food Availability Index score for supermarkets, convenience, and corner stores is low.

"unfair coming into a neighborhood where there was a lot of vacant land, growing food on it, and not sharing it with the community."

The farmers struggled to create a project that would serve the community without simply acting as a charity. In initial discussions with community association leaders, one farmer wrote:

> *As lovely as [giving food away] is, I feel like it is not a sustainable model and … free giveaways create a strange power dynamic. And at the same time coming and using a community's land to grow food also feels a bit exploitative if some of that food is not getting back into the community. I feel like we are walking this fine line between charity and exploitation and neither feels good.*

To solicit community input and gauge support for having a farm in the neighborhood, the farmers spoke with residents living on the block surrounding the vacant lot and attended community association meetings prior to breaking ground. They ultimately settled on a business model whereby they sell farm produce at a weekly on-site farm stand, through a neighborhood CSA, and at a shared produce stand at a farmers' market in a nearby neighborhood. To keep the produce affordable for low-income residents, they accept federal food aid benefits. They also freely share the food at community association meetings, community events held at the farm, and with curious passersby. Through this community-oriented model, the farm is not economically sustainable, instead relying on grant support and the volunteer labor of the farmers and others.

According to interviewees, residents' reception to the idea for the farm was mostly positive, though some expressed initial doubt about how the neighborhood would benefit from the farm. One resident said it was seen as a "hobby for spoiled kids." Over time acceptance increased due to the dedication the farmers demonstrated to the farm and neighborhood.

> *In honesty… first I thought the majority of the people that were up there were white people. And I thought it was gonna benefit them. And then, those girls came out in the community strong. And my whole thought just turned around. … they got involved with the community association, they would bring stuff to the meetings, they knocked on every door darn near around here. And they gave samples out. … It wasn't, "Cause we white, we gonna do this and… take it over here..." They gave back right to the community. – Resident*

Interviewees praised the farmers for how hard they work, and for no pay (the farmers also hold full-time jobs). The farmers' dedication is demonstrated through their openness to residents' suggestions and commitment to addressing residents' concerns about the farm, and their active participation with the community association.

> *[The farmers have] made it clear that this is not just a farm that is used to produce food to put money in [their] pockets, this is a community thing. … The money that [they] have gotten from the farm, they turn around and spend it back on the farm, and things for the neighborhood. – Neighborhood leader*

Interviewees described litter as one of the neighborhood's main challenge and praised the farmers for cleaning up a formerly trash-filled lot. The farmers also helped drive efforts to clean up the wider neighborhood, for example, by selling trashcans and recycling bins for a discounted price during a community event at the farm. Other benefits described by residents included the creation of community space that brings the neighborhood together and positive activities for youth, including opportunities to learn about the provenance of food.

Some interviewees described the provision of fresh fruits and vegetables as an additional benefit, though this did not appear to be the farm's most salient contribution to the neighborhood. Despite efforts to make the farm's produce available and affordable, the farmers reported that few people came to the farm stand, and an attempt to sell the produce at a local corner store was unsuccessful. A few interviewees explained that the

lack of interest in the food stems from residents' reluctance to eat food grown in a previously trash-filled space.

> *[T]here was a lot of concern in the neighborhood. A farm there? [Residents] really didn't think it was a good idea. …'cause that area was so filthy. There was so much trash. So much rats. …it was like a dumping ground. It was really bad, I mean not some place you wanna eat from. – Neighborhood leader*

Beyond providing access to the farm's produce, the farmers engaged the community by hosting community events and free gardening workshops, running an after school garden club for youth, and offering volunteer opportunities. After resolving some aesthetic issues, the farm is now neatly maintained and incorporates pieces of artwork, decorative plants, and benches—all efforts to create a welcoming environment. Observations at the farm revealed substantial informal interaction that occurs between the farmers and local residents. A steady stream of foot traffic flows past the farm and residents frequently greet the farmers. The farmers intentionally take time to talk to passersby in an effort to build bonds with community members:

> *I think having a regular presence… you see the regular people, you wave, you say "hello," you walk over, you say "OH, you know, we're growing this right now." … [A]nd they feel welcomed to come in. I think engaging with people, and showing them around makes them feel like they are able to come in and get used to the project. – Urban farmer*

Community events held at the farm—such as seasonal festivals—were viewed by interviewees as particularly important in creating a connection between residents and the farm.

> *[O]ur block party in October was AMAZING. … There was so many people there from the neighborhood and even people who had never been to the [farm]… So it was just a great way to get everyone involved. …. People showed up early to help set up… we did make phone calls and invited people to the block party, but didn't actively ask them to help set up and people just showed up, and said, you know, "What do you need?" – Urban farmer*

According to the farmers, a free, on-site community garden is one of the most successful ways they have engaged the community. The farmers actively engage with the community gardeners and support them with resources, education, and encouragement, creating a space within the urban farming project specifically for the community.

6.4.2 Case 2: Urban commercial farm

Located between a block of houses and a major thoroughfare, the commercial farm started operating just before the study began. Over the course of the study, the farm grew from one hoop house to several, with plans to construct a 1.5-acre hoop farm. The produce (primarily greens) is grown inside the season-extending structures. The farm is a collaboration between a for-profit urban farming company (UFC) and a community-based organization (CBO) in the neighborhood. The CBO owns the farm while the UFC provides technical expertise and markets the produce to local restaurants and institutions. Though the CBO relies on some grant funding, it aims for the farm to be financially sustainable through produce sales.

The UFC and CBO leaders share a motivation to create jobs through urban farming. The UFC aims to create economically sustainable urban farms throughout Baltimore that pay living wages. This aligns with the CBO's aim to "end poverty in the community" by creating jobs for the neighborhood's ex-offenders. The potential for job creation appeared to align with the needs of the neighborhood. Interviewees described crime and drug activity—and the environment it engenders—as the neighborhood's main challenge. One neighborhood leader saw the farm as providing youth with an alternative livelihood model:

> *I think one positive [of the farm] is that we're [employing individuals] coming back from incarceration. And these are people who have lived in*

> *this community and know this community, right? … This population becomes mentors for the younger ones in the community—examples of what the possibilities are other than drugs and crime and what traditionally is the alternative to a lot of the youth.*

Similarly, the farm manager (who is from the neighborhood) described his motivation to work on the farm in terms of a desire to show his sons an alternative way of making money besides dealing drugs. That said, some community members were dismayed that farm jobs were reserved for ex-offenders, and others questioned how many jobs would actually be created.

Residents reportedly reacted to the farm with initial skepticism, arising out of concern about its sustainability and fear the farm would be vandalized and attract rats.

> *[E]ven though this is in the inner city… [residents] don't wanna see an eye sore created… [Residents] fear someone coming in the neighborhood, putting something else up, promising this, promising that, and then letting it go. – Farm manager*

Interviewees noted that the CBO's role in establishing the farm helped to alleviate skepticism. One UFC co-founder explained that residents have "a huge amount of distrust of outsiders, and I would say white people, coming into their neighborhoods." Although white individuals who are not from the (predominantly black) neighborhood run the UFC, by partnering with the CBO they avoid the farm being seen as an "outsider project." Some resident interviewees said they did not have a problem with outside organizations starting urban farms rather than local residents—the important thing is that the farm was started. In contrast, one interviewee was adamant that employing "local guys" to work on the farm had protected the farm from threats of vandalism:

> *[W]e don't do good with outsiders. With you trying to start something new … where we've been at for all these years. It wouldn't last. … [S]o if it was just like a business, "Okay I want this land and Imma bring my own guys in and I'm going to do what I wanna do…" What happens is, vandalism would take over. … [N]ow they have someone on the inside,*

> *you know, that is from the community, a lot of that shit cuts out... We can talk to people in our community because they're not afraid to ask us questions... Like we're what they know. ... If it was only white people running this site, that shit would not last…*

Aside from employment, efforts to involve local residents in decision-making about the farm are largely absent. The process of gaining community buy-in for the farm proposal was limited to two community meetings, during which residents were able to ask questions and voice concerns. One resident interviewee who lived next to the farm did not attend these meetings; she said she learned about the farm by walking out of her house and seeing a hoop house under construction. One neighborhood leader lamented the lack of community involvement in the farm's design and critiqued the lack of transparency in the process of establishing the farm.

The lack of community involvement does not necessarily discolor residents' perceptions of the farm. Resident interviewees reported they appreciate the farm for its novelty and are proud it is in the neighborhood. Residents were also happy to see something productive done with the formerly vacant lot and commented on the farm's potential to improve the neighborhood's reputation by showing that the community cares. As one resident noted, "it don't look like we just letting it wear away and not doing anything with it." Several responses by interviewees reflected a sense that the farm gives the neighborhood hope that positive changes are occurring in a neighborhood where "there's so many negative things that are going on," acting to "uplift" the community. As one resident put it, "When you see something that's being turned from being destructive into something that's being productive, it kind of raise your spirits."

Residents were also enthusiastic about the potential for having fresh produce in the neighborhood, describing local supermarket produce as "all shriveled up" and "the

bottom of the barrel." However, because the UFC markets the farm's produce, residents can not directly purchase food from the farm. Interviews with residents revealed confusion about the availability of the farm produce, with several interviewees expressing appreciation that local community members could purchase fresh vegetables in the neighborhood. Residents' lack of knowledge about the availability of the farm's produce suggests that few people had sought it out, though it is important to keep in mind that at the time of the study the farm was still quite new.

The UFC and CBO leaders recognized the importance of providing access to the farm food in order to better integrate the project into the community. They suggested this might happen in the future, for example through an on-site farmers market or gleaning orchard. The barrier to enacting these ideas was the cost, since they aim to earn enough profits from produce sales for the farm to be financially sustainable. In response to the lack of access by local residents to the farm produce, one neighborhood leader critiqued the city for "selling" the farm to the community on the basis of greater food access:

> *The city was selling it as, "Oh, it's a food desert! And … that the people have access to excellent fresh food, organic foods and blah blah blah." And of course, [the UFC] is saying, "Hey, this is another way we can make some money, baby!"… The city is interested in making [itself] look better, like, "This is one of our food deserts within the city, and the people living in that area, they'll have access to fresh food." But that's not true. At this point. …what's created [at the farm], is not going to the community. … It's still a food desert.*

6.5 Discussion

Viewed through the lens of scholarly critiques of the local food movement, these case studies of two of Baltimore's urban farms afford several insights regarding the social impact urban farms may have on local communities. These are summarized in Table 14.

Table 14. Assessment of three critiques of the local food movement as applied to two urban farms in Baltimore, Maryland

	Community Farm	Commercial Farm
Critique 1: A focus on economic, rather than civic, exchange		
Evidence of civic exchange	• Farmers motivated to share farm food with neighborhood residents • Residents view farm as contributing to common good by cleaning up a vacant lot, providing education for youth, bringing community together, and providing a source of fresh produce • Farmers emphasize community engagement over profits—though farm produce is sold, profits are reinvested in farm and produce is often shared freely • Idea of public work embodied by farmers who work without pay and volunteerism from local community • Farmers sought input/support from local residents before establishing farm • Local residents invited to participate in free community garden where decisions made jointly • Public space created through substantial interaction between farmers and community members	• Farmers motivated to create local jobs, aligning with neighborhood's need to provide young men with an alternative models for employment • Residents view farm as contributing to neighborhood by creating something positive that is a source of neighborhood pride
Evidence of focus on private enterprise	• Overall ownership of, vision for, and decision-making about farm lays with farmers	• Produce not sold within neighborhood • Priority placed on financial sustainability • Community input not sought during farm planning process

		• Little evidence exists that farm creates public space • Overall ownership of, vision for, and decision-making about farm lays with UFC and CBO
Critique 2: Inequity in the accessibility of alternative food		
Evidence of efforts toward food equity	• Farmers motivated by need to share farm produce with broader community • Farm produce made available to local residents through neighborhood farm stand and CSA • Farm accepts federal food aid benefits to make food affordable • Free plots at associated community garden provide space for residents to grow their own food • Wide variety of produce grown appeals to diverse consumers	• Farmers' recognized importance of providing local community with access to affordable fresh produce and hoped to do so in the future
Evidence of food inequity	• Few residents purchase farm food, purportedly due to hesitancy to eat food grown in a formerly trash-filled lot	• Farmers prioritize job creation over food equity • Farm produce not accessible to residents • Crops selected for their appeal to high-end purchasers
Critique 3: White dominance and social exclusion within alternative agrifood institutions		
Evidence of social inclusiveness	• Decision to start farm made with substantial community input • Farmers make numerous efforts to create a welcoming environment and include residents in farm activities, including through community events that draw much of the neighborhood	• Primary farm managers are black and from the (predominantly black) neighborhood • Well-known CBO partner creates a sense of trust in the project • Residents expressed interest in eating farm food, describing it as higher quality than conventional

	• Farmers' dedication to neighborhood changed residents' perceptions about who the farm serves—now seen as a community project	supermarket produce
Evidence of potential social exclusion	• Farmers are white; neighborhood is predominantly black • Challenges in marketing produce suggests lack of interest by residents in obtaining food through an urban farm	• Decision to start farm made with minimal community input • Aside from potential job creation, efforts not made to involve local residents • Although residents expressed interest in purchasing farm produce, their lack of awareness that it was not available indicates that they had not tried to access it

First, the case studies encapsulate the existing tension between the ideals of civic agriculture—which prioritize citizen participation in the food system—and the ways it is frequently enacted, i.e., via the development of commercial enterprise. The urban agriculture sector in the U.S. is historically oriented toward civic engagement, though not necessarily in the vein of grassroots activism associated with the current urban agriculture movement. Today's participants aim to solve a range of environmental, health, and social issues through urban agriculture (Birky & Strom, 2013). This includes urban farmers, but with its focus on income-generation, urban farming is inherently market-oriented. Study findings reveal how urban farms exemplify this dissidence between civic and economic interests, depending upon their goals.

In the community farm case, civic exchange is prioritized over economic goals. This is evidenced by the farmers' motivations to share their produce with the neighborhood, their efforts to gain community buy-in before establishing the farm, and their engagement of local residents as community members, rather than consumers.

Although the farm is not owned by the community nor democratically run, the farmers prioritize the neighborhood's needs. In turn, residents view the farm as contributing to neighborhood improvement, in particular by alleviating the trash problem. In contrast, the commercial farm prioritizes financial sustainability over community engagement. Community acceptance, rather than input, was sought in the establishment of the farm, and its produce remains unavailable to local residents. But to describe this farm as focused on private enterprise ignores the fact that a social goal lies at the heart of the project as the CBO works to create jobs for the neighborhood's ex-offenders. Furthermore, residents view the farm as helping to "uplift" the community in numerous ways.

We also see how the community farmers embody the idea of public work—the essential element espoused by DeLind (2002) for creating citizenship—by volunteering their labor to contribute to the farm's development and neighborhood improvement. The farm also creates public space through the involvement of committed neighborhood residents who participate in the community garden and volunteer at farm events. Public work is not evident at the commercial farm, and with little interaction with the neighborhood, the farm does not appear to create public space. Based on these findings, one might conclude that the prioritization of economic goals precludes civic engagement. However, research by Chung et al. (2005) demonstrates that it is not specific characteristics, such as for-profit or non-profit, that foster civic participation, but rather the creation of a spirit of collective work. Developing collective activities that engage the surrounding community could re-orient the commercial farm as a forum for civic agriculture.

Second, the case studies reveal the differential capacity of urban farming models to address food equity. Scholars argue that a market orientation limits the local food movement's ability to address equality in the accessibility of alternative food, instead privileging affluent consumers (Mares & Alkon, 2011). With an aim to remain financially sustainable constraining the CBO's ability to address food equity, the commercial farm fell into this model. Though located in a low-income neighborhood, the farm's produce was sold outside the neighborhood. In contrast, the community farmers make substantial efforts to produce food that is accessible, affordable, and desired by community members. However, these efforts come with a reliance on grant funding, leaving the viability of the farm at its funders' whims. These two case studies highlight a critical question with which the urban agriculture community grapples: Is it possible to run an economically sustainable urban farm that provides low-income customers access to affordable fresh food? This is an important question for further research.

Third, the case studies highlight urban farmers' recognition of the need to be socially inclusive and the varying ways this is achieved. Research conducted in Philadelphia has shown that urban farming is perceived by some as run by young white people, unintentionally excluding people of color (Meenar & Hoover, 2012). Baltimore's urban farming community is similarly dominated by young white individuals, with farms located where vacant land is available—generally, low-income, predominantly black neighborhoods. Digging deeper, this pictures is more complex than simple demographics. In the community farm case, the farmers are white and not from the predominantly black neighborhood where they farm, but they had gone to great lengths to ensure the farm was a welcome addition to the neighborhood before breaking ground. Over time, they

demonstrated commitment to the neighborhood, ultimately changing residents' perceptions about whose interests the farm serves. The farmers also create a welcoming environment at the farm, including hosting events that draw out the entire neighborhood. The leaders of the commercial farm had not made such efforts to engage residents, instead relying on the trust the CBO had established within the community. By hiring local residents to work at the farm, they further ensured that the project would be viewed as a community project.

Scholars have also questioned whether alternative food appeals to the poor and people of color. Though residents from both study sites spoke positively about urban farm food and the convenience of having a local source of fresh produce, study findings reveal that the community farmers struggled to market the farm's produce, and residents interviewed at the commercial farm site were not aware that produce was not sold locally. These findings suggest either a lack of interest by residents in obtaining food through an urban farm—as indicated by interviewees at the community farm site who suggested the lack of interest in the farm food stems from residents' hesitancy to eat food grown in a formerly trash-filled lot—or the existence of structural barriers that constrain residents' ability to purchase and prepare fresh produce. Urban farming is frequently promoted as a solution to food deserts by providing a local source of fresh produce. However, neither case study provides evidence for the success of this strategy. Future research should investigate the appeal of urban farm food to a range of consumers, as well as the structural barriers that may limit consumption of food grown at urban farms.

One limitation of this study is the relative infancy of the commercial farm case, constraining the conclusions that can be drawn regarding the farm's social impacts. I

included it in the study despite this limitation because it provided an important contrast to the community farm. Furthermore, data collection occurred over the course of a year, and the findings that emerged during later interviews and observations mirrored those at earlier time points, strengthening my confidence in the findings from this study site. The triangulation of data collection methods and sources was a particular strength of this research, facilitating a deep exploration of the ways that urban farms are embedded within the social context of the city. However, these two cases should not be taken as representative of all urban farms.

6.6 Conclusion

Encapsulating an approach to food production that is rooted in the local ecological, social, and economic context, urban farming in many ways exemplifies the ideals of civic agriculture. The exploration of two markedly different urban farm cases illustrates the ways in which urban farming prioritizes place, as well as the inherent difficulty in fully meeting the aims of the local food movement. The community farmers emphasize civic exchange, food equity, and community engagement, and have adapted the farm to meet the needs of the neighborhood. In this way, we see a strong emphasis on building bonds between the farmers and the local community. Yet it is the community farm's non-profit model that allows it to deemphasize economic exchange, leaving the long-term sustainability of the farm at the whims of grantees and the auspices of the urban farmers. In this way, the farm has room to grow in terms of creating a more democratic space. The commercial farm case demonstrates farmers striving to nurture local economic development through job creation, but the farm lacks the food justice focus and participatory processes that are critical to addressing food system inequities. However,

despite its emphasis on economic goals, the farm is viewed as a community project due to the participation of a trusted group and individuals with whom the local community can relate, potentially drawing in the populations that food justice programs strive so ardently to serve.

Chapter 7. Conclusions

7.1 Summary of findings

Through prior work within Baltimore's urban agriculture community, I had witnessed the enthusiasm that abounds for expanding urban farming. Yet I had also heard stories about communities that rejected proposals to start urban farms in their neighborhoods. Such anecdotes highlighted the need for research to better understand the full range of perspectives that exist regarding the acceptability of using city space for urban farming. This need was further justified by recent critiques calling attention to the potential exclusion of people of color from participation in urban agriculture (Hoover, 2013). Much of the support for urban farming in Baltimore is driven by an aim to serve low-income communities through greater food access, neighborhood revitalization, and local economic development. Considering that many of Baltimore's low-income neighborhoods are predominantly black, such social exclusion of people of color from urban farming could counteract these aims.

Manuscript 1

Manuscript 1 (Chapter 4) gets at the heart of this matter, exploring the relationship between the five urban farms included in this study and the communities that surround them. In this paper, I focus on the concept of community buy-in, exploring perceptions related to the importance of community buy-in for urban farming, as well as the barriers, facilitators, and strategies for gaining such buy-in. Study findings revealed consensus regarding the perceived importance of community buy-in for urban farming. The most common justification for community buy-in provided across interviewees related to the vulnerability of urban farms to vandalism and the need to build understanding and

solidarity so community members will help protect these farms. A second common reason was the need to ensure that urban farms provide benefits that resonate with local residents, rather than making assumptions about what the neighborhood desires.

The strategies that urban farmers in Baltimore use to gain community buy-in fell into three main phases. The first phase relates to the early strategies farmers use to develop ties within a neighborhood, such as forging relationships with community members and groups, gaining an understanding of the neighborhood context so as to ensure an urban farm is a good fit with the neighborhood, selecting a socially-appropriate site for a farm, and demonstrating commitment to the neighborhood. The second phase addresses the way in which an urban farm is introduced to a neighborhood, including strategies such as soliciting resident input, demystifying urban farming to overcome a lack of familiarity with the activity, and presenting the idea for a farm in ways that address common concerns about urban farming and emphasize the benefits it provides to neighborhoods. The third phase involves an ongoing process to encourage local residents to engage with the farm by creating a welcoming environment, providing a range of opportunities for residents to engage with the farm (including access to farm-grown food), communicating openly with residents, and considering how a farm's appearance meets residents' expectations for their neighborhood. Drawing upon these strategies, Manuscript 1 presents a set of recommendations to assist urban farmers in their community buy-in efforts.

In my efforts to situate the study findings within the broader literature base, I discovered a vast research gap regarding effective processes for gaining community buy-in. In fact, the term "community buy-in"—though widely used in the context of health

and social justice programming—is not well defined or differentiated from similar processes such as community participation and community acceptance. Thus, aside from discussing strategies to strengthen the relationship between urban farms and local communities, a second goal of this paper is to define "community buy-in" as it is used in the programmatic literature and contribute to the task of determining effective processes for gaining community buy-in. Based on my findings, several general themes emerged regarding effective community buy-in processes, including the need for fairness in the distribution of benefits and drawbacks resulting from the development of a project, the importance of project implementers gaining an understanding of the community context in which they work and overcoming perceptions as being neighborhood "outsiders," the need to involve local residents in decision-making, the importance of transparency throughout the project planning process, and the importance of community engagement as a relationship-building process. These themes provide a starting point for developing an effective community buy-in process that cuts across various programmatic areas.

Manuscript 2

Although study participants voiced concerns about urban farming, the vast majority of my data indicates broad acceptance of urban farming as a use of vacant city land. Interviewees discussed numerous ways that urban farms benefit neighborhoods, which notably extend well beyond local food production. As we have seen, the community gardening literature is saturated with studies extolling the range of benefits associated with gardening participation and the contribution urban gardens make to neighborhood improvement, but few studies have explicitly focused on this aspect of urban farming.

Taken together, these points highlight a need for scholarship detailing the perceived benefits of urban farming. This became the focus of my second manuscript.

In Manuscript 2 (Chapter 5), I develop an emic model that depicts the ways in which community members view urban farming as contributing to neighborhood improvement. My findings show that to some degree, the perceived benefits of urban farming for neighborhoods differ by farm type. Stemming from the creation of projects that welcome public involvement, urban community farms were thought to increase social connectedness in neighborhoods. As new local businesses, urban commercial farms create potential employment opportunities. Yet some benefits exist irrespective of farm type. Specifically, both community and commercial farms physically improve degraded space and produce local food, leading to an array of perceived benefits related to the positive transformation of the physical landscape, improved perceptions of a neighborhood's reputation, increased access to fresh produce, and educational and youth development opportunities. These benefits have the potential to contribute to broader conceptual influences on neighborhood improvement that have been previously discussed in the scholarly literature, including neighborhood attachment, neighborhood confidence, food access, agricultural literacy, food citizenship, youth development, and economic development.

What is the utility of such a model? For one, it demonstrates that the value of urban farming should not be assessed without incorporating the multifunctionality that accounts for the many services it provides. It is difficult to justify the use of urban land for agriculture based only on the potential for food production. Compared to the production efficiency of rural and peri-urban farming, urban farming cannot compete, nor

does it make sense from a development standpoint to use limited city space to grow food. The model presented in Manuscript 2 reveals the multiple ways that urban farming contributes to neighborhoods, including, but not limited to, food production. It also presents a framework for evaluating urban farming that accounts for its multifunctionality.

Second, by isolating these benefits, the model can be used to develop indicators for evaluating urban farming, ultimately providing insight as to how to promote urban agriculture in a manner that resonates with city residents. In particular, the model provides a roadmap for developing a process of social and environmental accounting for urban farming. As a way of communicating organizations' non-economic impacts, social and environmental accounting may provide a novel process for more holistically relaying the benefits and successes of urban farms.

Manuscript 3

Having taken a very practical look at the social aspects of urban farming through my first two manuscripts, Manuscript 3 (Chapter 6) presents a theoretical assessment of urban farming, exploring how it aligns with the ideals of civic agriculture, the guiding principle behind the local food movement. As the local food movement has grown, scholars have raised concerns about how alternative agrifood institutions are put into practice, including issues related to a deflected focus on citizenship, inequity in access to alternative food, and social exclusion. In Manuscript 3, I review the literature related to these three critiques. I then use in-depth case studies from two of the urban farms included in this study—one community farm, and one commercial farm—to assess the relevance of these critiques to urban farming.

Study findings reveal that the two urban farms encapsulate the tension that appears to exist between the ideals of civic agriculture—which prioritize public interests and citizen participation in the food system—and the ways it is frequently enacted, i.e. through the development of commercial enterprise. In the case of the community farm, civic exchange is prioritized over economic exchange, with the farmers emphasizing the neighborhood's needs and interests over the farm's economic sustainability. This is possible because the farm is grant-funded and due to the enormous dedication of time and energy by the farmers. In contrast, the commercial farm prioritizes financial sustainability over community engagement, though the farm is driven by a social goal of creating jobs for the neighborhood's most vulnerable residents.

The findings further demonstrate that with its prioritization of economic goals, the commercial farm does not address food equity. Farm food is produced solely for sale to high-end markets such as restaurants and so is not available to local residents. In contrast, the community farmers make substantial efforts to produce food that is accessible, affordable, and desired by local community members. Yet despite its availability, few residents reportedly purchase the food. These findings reveal the differential capacity of urban farms to address food equity. They also point to a problematic assumption that urban farming inherently contributes to increased access to healthy fresh foods in food desert neighborhoods.

The study findings also highlight urban farmers' recognition of the need for their projects to be socially inclusive and the different ways this is achieved. In the case of the community farm, the farmers are white and not from the predominantly black neighborhood where they farm, but through their demonstrated commitment, they

ultimately changed residents' perceptions about whose interests the farm serves. The leaders of the commercial farm had not made such efforts, but with a trusted community-based organization as the farm's official owner and local residents working at the farm, the farm was viewed by resident interviewees as a project for the community.

Despite limitations of each urban farm, these two cases illustrate the ways in which urban farming encapsulates an approach to food production that is rooted in place and therefore exemplifies many of the ideals of civic agriculture. This type of theoretical evaluation is important for ensuring that the local food movement remains true to its original aims and indicating where course corrections may be warranted.

7.2 Overall conclusions

Taken together, findings from this research illustrate the complexity that exists in the relationship between urban farms located in residential neighborhoods and the communities that surround them. Although community members perceive urban farms as providing a range of contributions to neighborhood improvement, as demonstrated in Manuscript 2, the importance of the community buy-in process for building a positive relationship between farms and communities cannot be overstated, as seen in Manuscript 1. The social impact of different urban farming models influences this relationship and reflects the degree of success achieved by urban farms in providing a locally-based alternative to the industrial food system, as illustrated in Manuscript 3, as well as their ability to create bonds within the local community. Overall, this research highlights the influence of the farming systems, the farmers, and farm food on community perceptions of urban farming. Understanding such influences can help strengthen farm-community relationships and the viability of urban farming.

7.2.1 Urban farming systems

In each of the three studies comprising this research, it became apparent that the dichotomy between urban community farms and urban commercial farms plays a strong role in how urban farms interact with the surrounding community. In Manuscript 1, this was reflected in the ways in which urban farmers discussed the need for community buy-in. Although I found consensus across all interviewees from all case types regarding the importance of community buy-in for urban farming generally, commercial farmers tended to downplay the need for community buy-in for commercial farms, as demonstrated by an expanded quote from Manuscript 1:

> *[I]t can be kinda difficult to say, "Well, I'm going to base where I'm going to put my business on the attitudes or ideas of a few people." ...[H]ow many successful businesses do that? If what you're doing is from a business standpoint. ... [If] your next door [neighbor] doesn't understand that, does that mean you shouldn't do it? ... [S]o this one person keeps you from serving all these other people that live in the neighborhood. – Urban commercial farmer*

Commercial farmers tended to focus on urban farms' vulnerability to vandalism as the justification for needing community buy-in, whereas other interviewees also brought up the importance of aligning the services provided by an urban farm with the needs and desires of local residents. This differential orientation to community buy-in was encapsulated in the two case studies depicted in Manuscript 3. As we saw, the community farm prioritized civic exchange over economic exchange and achieved community support through extensive engagement with residents. The commercial farm prioritized economic exchange and achieved community support through a partnership with a trusted community-based organization and by employing local residents at the farm. Finally, the dichotomy between community and commercial farms also factored into the ways in

which urban farming is seen to contribute to neighborhood improvement, as seen in Manuscript 2.

The differentiation of urban commercial farms from both community farms and other types of small businesses presents a unique challenge to urban commercial farmers. Why are urban commercial farms perceived differently than other businesses in terms of their need to gain community buy-in? It is hard to imagine a corner store going to great lengths to win the hearts and minds of local residents. The answer partly stems from the establishment of urban farms in residential zoning districts—these vacant lots are not necessarily open to commercial development. Urban farms' vulnerability to theft and vandalism is certainly another factor, as is the fact that Baltimore's urban farms are primarily located on city-owned land, which some interviewees considered a community asset that should be used in ways that benefit the local neighborhood. In addition, some study participants indicated that the peculiarity of urban farming necessitates the community buy-in process. Urban farming is a strange new use of city space, one with which people need to become comfortable. As one resident interviewee exclaimed, "I might have seen a few neighbors who was growing their own vegetables or something like that, but to actually see a big site, you know with vegetables growing in the big hoop [house], man, I never in my life seen that since I've been living in the city, and I'm 46 years old!" The strategies described in Manuscript 1 for gaining community buy-in are a solid starting point for increasing city residents' comfort with urban farming, but in the end, it is the presence of an operating farm that yields the greatest change in perceptions. As one resident interviewee exclaimed, "When I saw that there were corn growing up

there, I knew this was the real deal! You know, they got corn out here in the heart of the ghetto?"

7.2.2 Urban farmers

Another theme woven throughout the research findings is the distrust Baltimore residents have for projects that are run by "outsiders." Similar to findings from a study conducted in Philadelphia (Meenar & Hoover, 2012) and prior research in Baltimore (Hu, et al., 2011), this study revealed that urban farmers are sometimes perceived as "outsiders" who are coming into a neighborhood to change things, which can breed resistance to the urban farm. This generally occurs when urban farmers are not residents of the neighborhood or are of a different race from the majority of residents. In Baltimore, a large proportion of urban farmers are young white individuals, farming in neighborhoods that are predominantly black. For example, a neighborhood leader at one site posed the question, "It's a good project, but how do we get past the fact that [the farmers are] all young and white with money?" The urban farmer from this site acknowledged the difficulty they had faced in getting black residents involved with the project and that one of the biggest challenges the farm initially faced was being seen as a "white people project." At another site, an urban farmer reported that members of a local congregation had challenged plans to start a farm in the neighborhood because the farmers were "white [people] coming in from the outside into this neighborhood that was predominantly black" and claimed that the farmers were "putting what you want to see on these people."

As described in Manuscript 1, urban farmers overcame issues of being perceived as "outsiders" and fears that they are exploiting neighborhood assets by demonstrating

their dedication to the urban farming project and the larger neighborhood, and by making concerted efforts to engage with local residents.

> *[D]efinitely I've got some death stares … like, "I don't know you, you're not from around here, I don't trust you…" [T]hat's really only something you can change by being there a lot and just getting to know people on a daily basis and just chipping away and chipping away… – Urban farmer*

Other urban farmer interviewees noted that being from the neighborhood in which they farmed helped in gaining acceptance. Going back to the critique raised by Hoover (2013) regarding potential social exclusion in urban agriculture, overall my study findings both confirm that such concerns are valid and highlight the varying ways that urban farmers establish socially inclusive environments at their farms, as described in Manuscript 3.

7.2.3 Urban farm food

Somewhat surprisingly, the food produced by urban farms appears to play a lesser role in residents' acceptance of urban farming than other benefits of urban farming, a theme that surfaced repeatedly throughout this research. Although resident interviewees frequently noted the appeal of having a hyper-local source of fresh fruits and vegetables, only a few discussed it with the level of detail that is usually present when people talk about something they value. I began to wonder if "greater access to healthy fresh food" might simply be a prototypical response to queries about a food-related project. More revealing was the frequency and enthusiasm with which resident interviewees discussed *other* benefits of urban farming, such as the cleaning up of a vacant lot. As depicted in the model in Manuscript 2, food production was one starting point by which community members perceived urban farms to contribute to neighborhood improvement, but three other pathways emerged from these findings that were not related to food production. Furthermore, in discussing the benefits related to the food production capacity of urban

farms, interviewees did not focus solely on the consumption of farm food—they also extolled the opportunities for city residents to learn about food production. Similarly, Manuscript 1 demonstrates that although providing access to urban farm food is an important strategy for gaining community buy-in for urban farming, the majority of the buy-in process relies on general relationship-building.

The in-depth look at two farm cases in Manuscript 3 adds yet another layer of complexity to this issue, revealing that urban farms do not necessarily improve local access to fresh produce. In the case of the community farm, the farmers go to great lengths to make the farm produce accessible, affordable, and desirable to residents, but few reportedly purchase the food. In the case of the commercial farm, the produce was not available for local residents to purchase. Though resident interviewees spoke positively about urban farm food and the convenience of having a source of fresh produce located within the neighborhood, study findings reveal that they were not aware that produce was not available for sale. These findings cast doubt as to whether these residents truly had an interest in obtaining food through an urban farm. Baltimore municipal policy has in part supported urban farming as a solution to food deserts, but neither case study provides evidence that urban farms substantially change the local food environment. However, these findings must be interpreted cautiously, as they only represent two urban farms and the views of a limited subset of residents.

These findings highlight the importance of assessing urban farming in terms of its multifunctionality and not simply for its contribution to food production, as discussed in Manuscript 2. There may be a limited role for urban farming in contributing to the urban food system, but when assessed holistically in terms of the range of benefits it has the

potential to provide—e.g., opportunities to enhance neighborhood attachment and confidence, greater agricultural literacy and food citizenship, and youth and economic development—urban farming takes on an irrefutable logic. From the sum of this research, it is clear that regardless of the business model that is employed, urban farms' contribution to cities goes well beyond the food they produce, encapsulating an approach to food production that is rooted in place and exemplifies many of the ideals of civic agriculture. Yet to reap these benefits, urban farms must establish positive relationships within the communities where they are housed. Toward this end, purposeful community buy-in processes play an essential role, giving voice to all of the groups that together cultivate a successful urban farm—from the urban farmers who coax fresh food from city soils, to the leaders who strive to improve their neighborhoods and the residents whose daily lives are colored by the local landscape.

7.3 Strengths and limitations

A strength of this research is its use of qualitative methods. In particular, the use of a qualitative case study methodology facilitated an in-depth understanding of each urban farm included in the study and the surrounding community, as well as exploration of perspectives unique to urban community farms and urban commercial farms. This is the first study to explore community perceptions about urban farming as a use of vacant land, making an important contribution to the scientific literature and on-the-ground efforts to scale-up urban agriculture.

These strengths, however, must be considered within the context of the limitations of this research. For one, my ability to capture antagonistic attitudes that may exist toward urban farming was constrained by the small pool of eligible sites from which I

selected farm cases and a reliance on snowball sampling to recruit resident interviewees. I initially set out to include two "rejected" farm cases (neighborhoods where a farm proposal was rejected based on objections by the community) in this study. After interviewing a neighborhood leader from one of the sites it became clear that a specific plot was never identified for the potential farm, and the urban farm for whom the city was seeking land had never been involved. In sum, the plans for the urban farm were so ambiguous that the issue lacked salience for community members. Furthermore, efforts to recruit resident interviewees were unsuccessful. I ultimately concluded that this site would not yield the findings I was searching for—namely, the reasons that residents might oppose urban farming—and so omitted it from my study design. The second rejected farm case was more informative as it truly was a case of a well-delineated urban farm proposal being rejected by a community. That said, I quickly learned that the opposition to the farm came from a single influential individual who was unfortunately unwilling to be interviewed. Other interviewees from this site shared their views regarding the reasons for this individual's opposition, but in the end, I was not able to directly incorporate her perspective. While the omission of any antagonistic views toward urban farming was partly due to these design limitations, to some degree it also reflects a lack of opposition to urban farming. There is likely ample indifference, but little actual antagonism.

A reliance on snowball sampling to recruit residents also led to an incomplete sample at one of the "new farm" study sites. At this site, there were few people living in the neighborhood and the neighborhood leaders and urban farmer that were interviewed were not able to provide contact information for any residents. One of my research

assistants also attempted to recruit residents through attendance at a community association meeting, with no success. I deemed other methods of recruitment—such as walking door-to-door or mailing recruitment flyers—as unsafe or ineffective. Yet the use of snowball sampling was also a strength in that it lent my research assistants and I some legitimacy in the recruitment process. It also led us to interview individuals with an interest in urban agriculture or who had established a relationship with the urban farm in their neighborhood, and because interviewees were interested in the research topic, these conversations generally yielded rich and insightful data.

7.4 Recommendations for future research

To my knowledge, this study is the first to explore community perceptions of urban farming. As such, it provides a springboard for future research on this topic. In particular, the pathways delineated in the model presented in Manuscript 2 provide several strands for future research to pursue. These include the potential impact of urban farming on conceptual influences on neighborhood improvement. While this research provides a theoretical connection to each of these concepts, it stops short of attempting to measure such impacts.

This study makes an important contribution toward understanding effective community buy-in processes, but in order to elicit a fuller understanding of this important process, research is needed that draws on the experience of projects that address topic areas beyond urban agriculture. An expanded research base would help confirm the findings of this study and potentially raise additional considerations for gaining community buy-in.

Finally, this research raised important questions regarding the utility of urban farming for improving access to fresh produce in food desert neighborhoods, and in particular, the desirability of urban farm food to residents of these neighborhoods. This research suggested that urban farm food is not necessarily desirable to all residents of these neighborhoods. As seen in the community farm case presented in Manuscript 3, some residents are hesitant to eat food grown in formerly trash-filled lots. In the commercial farm case, it appeared that residents had not sought out opportunities to purchase farm food, though the reasons for this were unclear. Future research should look more closely at whether people want to eat food grown at an urban farm, how this might differ across groups, and the influences on these desires. Perhaps urban farmers will find the greatest success in marketing their food to affluent consumers, as is seen with many farmers' markets and CSA programs (Guthman, et al., 2006), though this may perpetuate the development of the two-tiered food system that other scholars warn against (P. Allen, 2008; Guthman, 2008a).

Future research should further assess the structural inequalities that limit consumption of food grown at urban farms by certain groups. The cost of alternative food is one barrier to access, but others exist. Obtaining and utilizing such food requires time investment (a scarce resource for the working poor), further impeding equitable distribution. Direct agricultural markets such as farmers' markets primarily provide fresh produce, so to meet their food needs, participants must spend additional time shopping for supplementary foods (P. Allen, 1999). That said, urban farms with on-site stands or CSA programs might provide a more convenient option for time-strapped residents. However, preparing fresh produce also takes time and requires specific knowledge and

equipment. As Macias (2008, p. 1089) has commented, "Access to quality food is thus not just a matter of consumer tastes and affordability, but is directly tied to deeper structures of inequality that are themselves shaping the health profile of the nation along lines of race, gender, and socioeconomic status."

7.5 Policy recommendations

Findings from this research have important implications for the development and refinement of policies to support urban farming and the productive use of vacant land. First, the process of building positive farm-community relationships should be incorporated into municipal policies, urban farmers' individual planning efforts, and relevant training programs. In the implementation of its Land Leasing Initiative, Baltimore's Department of Planning (DOP) and Department of Housing and Community Development (DHCD) (2013, p. 7) acknowledge the need for urban farmers to engage local communities (as indicated in the application guidelines specified below) but fall short of providing guidance toward this end:

> *It is the goal of DOP and DHCD that any new urban agriculture ventures in the City of Baltimore, whether for-profit or non-profit, integrate well with the communities around them. Land to be offered to qualified farmers will be chosen for compatibility with surrounding land uses. In some cases, the land will be near or adjacent to residential areas. Qualified applicants will be expected to meet with local community members to discuss the farm management strategy and address concerns raised. Farmers should have the ability to work with citizens as necessary.*

Such initiatives are more likely to succeed if they ensure that groups farming in residential areas are equipped to build a strong relationship with the surrounding community, particularly when farmers might be considered "outsiders" to the neighborhood. Prior to this research, guidance was lacking regarding strategies to gain community buy-in for urban farming. I have filled this gap by writing a field report that

provides recommendations for strengthening the relationship between urban farms located in residential areas and the surrounding community. Providing urban farmers with this resource can simplify the challenge they face in developing a plan for community buy-in. In addition, considering that city government staff is likely to participate in the process of gaining community approval for the establishment of new urban farms, city offices such as the DOP and DHCD would benefit from the insights gained through this research.

The recommendations that emerged from this research would also be a useful addition to urban farmer training programs, such as Maryland's Future Harvest CASA's beginner farmer training program. Similarly, as the U.S. Department of Agriculture's extension program begins to delve into urban farming, the guidance provided by the field report may prove to be a useful resource for extension educators. Extension is often the first place urban gardeners and farmers go for information on issues such as soil contamination (B. F. Kim, et al., 2014). It thus provides a logical repository for information on other challenges associated with urban farming, such as navigating the social landscape of the city.

Second, with growing support for urban farming by municipal governments comes a need for an accountability process to justify the use of city resources and assets. As discussed in Manuscript 2 (Chapter 5), the process of social and environmental accounting (SEA) is a potentially novel way of relaying the benefits and success of urban farms. SEA is "the process of communicating the social and environmental effects of organization's economic actions to particular interest groups within society and to society at large" (Gray, 1996, p. 3). It extends the accountability of organizations beyond

economic measures of success and reflects their responsibility to undertake social and environmental actions (Gray, 1996). The model presented in Manuscript 2 provides a framework for developing numerous indicators of success for urban farming that could be used for SEA. In addition, though not mentioned by our interviewees, several environmental indicators could be incorporated, including the provision of various ecosystem services such as organic waste recycling and habitat creation for pollinators.

Finally, this research provides ample evidence for the importance of cleaning up vacant lots and actively using them for productive purposes, efforts that should be supported by strong municipal policy. As described in Manuscript 2 (Chapter 5), interviewees from this research valued urban farms largely because they made use of a formerly trash-filled vacant lot, resulting in an increased sense of safety, appreciation for the improved appearance of the neighborhood, and motivation to make additional improvements to the neighborhood. These findings align well with prior research conducted in Philadelphia that showed city residents perceive vacant land to negatively affect community well-being by attracting crime and contributing to a sense of fear and decreasing their control over the neighborhood environment (E. Garvin, et al., 2013).

Recognizing its detrimental impact on the community, Baltimore city has enacted several policies and programs to address vacant land, including a range of policies that specifically support urban agriculture, as described in Chapter 2. A range of community initiatives provide further support for cleaning up vacant lots in Baltimore, including Baltimore Green Space (a land trust), Blue Water Baltimore, the Parks and People Foundation's Neighborhood Greening Grants, and the Baltimore Growing Green Competition. This research validates the importance of these policies and programs.

However, considering the abundance of vacant land in Baltimore, which is most prevalent in the city's most disadvantaged neighborhoods, additional efforts are warranted. Supporting urban farming is a practical focus for such efforts, considering the multifaceted benefits that urban farms can contribute to neighborhood improvement. Toward this end, the municipal government has a role to play in reducing barriers to participation in urban farming. These efforts, combined with the hard work of urban farmers and the support of community members whose neighborhoods house these farms, are critical for ensuring urban farms' ability to successfully contribute to public health, environmental sustainability, and community development.

Chapter 8. Appendices

8.1 In-depth interview guide: Urban farmers

Introduction

Thanks for agreeing to be interviewed today. For our study, we are interested in learning about the relationship urban farms have with the community, and what farmers can do to gain the support of the surrounding neighborhood for the farm project.

About the farm and neighborhood

- What is your role on the farm?
- Can you tell me the story of how the farm got started?
  If not mentioned, probe on:
    - When the farm started
    - How the specific space was selected for the farm
    - The history of the space before the farm was there
    - The farmers' motivation for starting the farm
    - How the City was involved
    - Biggest challenge in getting the farm started
- What are the goals of the farm?
- How would you describe the neighborhood to someone who has never been there?
  If not mentioned, probe on:
    - What is the mix of people like in the neighborhood?
    - What about the physical environment?
    - What are the strengths of the neighborhood?
    - What are the major problems in the neighborhood?
- What do you think about the kinds of food that are available in the neighborhood?
    - Can people get the kinds of food they want?
    - Is it affordable?
    - Are there any other food buying options that you would like to see in the neighborhood?
- How do you think the farm has changed the neighborhood?

Community engagement process

One of the main things we are interested in with this research is to understand the interaction between urban farms and the residents of the surrounding neighborhood. In particular, we'd like to know what types of things someone who is starting a new urban farm might need to do to gain the support of the community for the farm, or if this is even important.

- So first, I'd like to ask you: How important do you think it is to have support from neighborhood residents for an urban farm?
- In what ways do you think residents should be involved in an urban farm?
- What did you do to try to get the support of the neighbors living around the farm for your project?
    - *Get details about each activity they did and at what point each of these happened. For <u>each activity</u> mentioned (meetings, events, going door-to-door, etc.) probe on how successful it was.*

  Probe:
    - How was the City involved?
- What were people's reactions to the things you did to try to gain their support for the farm?
  Probe on:
    - Examples of positive reactions
    - Examples of negative reactions

<u>Neighborhood residents' views about the farm</u>

- What did people in the neighborhood think about the farm when they first learned about the idea?
- Have neighborhood residents' views of the farm changed over time?
  If yes, probe:
    - Why do you think this is?
- What are some of the concerns people had about the farm?
- How did you or others working on the farm try to address these concerns?
- What are some of the things people liked about the idea of the farm?
- In your opinion, why do you think some people have a negative reaction or are skeptical of the farm while others were more positive? Differences between these two types of people?
  Alternatives depending on context:
    - Why do you think most people were skeptical?
    - Why do you think most people were positive?

<u>Residents' involvement with the farm</u>

- In what ways have residents been involved with the farm?
  If not mentioned, probe on each of the following:
    - Buy/eat produce?
    - Volunteer?
    - Come to events?
    - Participate in decision-making?
- Would you say community involvement in the farm has been high, medium, low? Why do you think this is?

<u>Lessons learned about community engagement</u>

- Based on the experience you've had, if you could go back in time, what do you think you might do differently in terms of gaining the neighborhood's support for the farm, particularly when you were first getting the farm started?
- What do you think you did well (in terms of gaining neighborhood support for the farm) that you would recommend to new urban farmers?

Final questions
- Rating exercise
- That's all the questions I have for now. Is there anything I didn't ask you that you think is important to share with me?

Additional information to obtain
- Documents the interviewee is willing to share, such as:
    - Materials distributed to the community about the farm
    - Reports written about the farm
    - Meeting notes
    - Grant applications
    - Media pieces about the farm
    - Blog/website address, etc.
- Participant observation opportunities, including:
    - Volunteer days
    - Community events at the farm
    - Farm stand sales
- Other potential interviewees – residents who live close to the farm that would be willing to talk about their impressions of the farm (both positive and negative).

8.2 In-depth interview guide: Neighborhood leaders

Introduction
Thanks for agreeing to be interviewed today. For our study, we are interested in learning about the relationship urban farms have with the community, and what Baltimore residents think about urban farming. We are hoping to gain some insight about what urban farmers can do to gain the support of communities for their farm projects.

About the neighborhood
- What is your role in the Neighborhood Association?
- Tell me about your neighborhood. How would you describe your neighborhood to someone who has never been here?
  If not mentioned, probe on:
    - What is the mix of people like in the neighborhood?

    - What about the physical environment?
    - What are the strengths/good things about the neighborhood?
    - What are the major problems in the neighborhood?
- What do you think about the kinds of food that are available in your neighborhood?
    - Can people get the kinds of food they want?
    - Is it affordable?
    - Are there any other food buying options that you would like to see in your neighborhood?

<u>Starting the farm</u>

- How did you first hear about the idea for X farm?
  Probe on:
    - What were you told about it? By whom?
    - Was the idea pitched as a positive addition the neighborhood? How so?
    - Were any drawbacks to having an urban farm in the neighborhood expressed when you first heard about it?
- What was your initial reaction to the idea of having a farm in your neighborhood?
  Probe on:
    - What benefits did you think it might bring to the neighborhood?
    - Who did you think would benefit from it?
    - Did you think it might cause any problems in the neighborhood?
    - Who did you think might be negatively affected by it?
- Can you tell me a bit more about the decision to start a farm there?
  Probe on:
    - What was your role?
    - Who was involved in deciding whether it was going to get started there?
    - How was that specific lot selected for the farm?
    - What is the history of the lot?
    - What do you think the farmer's motivation is for starting the farm?
- As you probably know, Baltimore has a lot of vacant lots and abandoned properties scattered around the City. Do you think urban farming is a good use of vacant lots? Why/why not?
    - When you first heard about the urban farm, what did they say in relation to use of vacant lots? Did you agree? Why or why not?

<u>Community reactions to the farm</u>

- How did the broader neighborhood first learn about the idea to start a farm in the neighborhood?

- What were the initial reactions of others in your neighborhood to the idea of having a farm in the neighborhood?
    - Was anyone skeptical about the idea? What were their concerns? What do you think about their concerns?
    - Did anyone try to address the concerns residents had about the idea of starting a farm in the neighborhood? How?
    - Was anyone excited about the idea of the farm? Why do you think they were excited?

  If relevant, probe:
    - In your opinion, why do you think some people were skeptical and others were excited about the farm? What is the difference between these two types of people? Do these two groups generally get along?

<u>Getting community support for a farm</u>

- In general, how important do you think it is to have the support of neighborhood residents for an urban farm?
    - In what ways do you think neighborhood residents should be involved in an urban farm?
- What was done to try to get the support of neighbors living in the area for the urban farming project?
  If not mentioned, probe to figure out who had a role and what steps they took:
    - Steps taken by the Neighborhood Association?
    - Steps taken by the City?
    - Steps taken by the farmer(s)?
- What were people's reactions to the things that were done to try to gain their support for the farm?
  Probe on:
    - Examples of positive reactions
    - Examples of negative reactions
- What do you think worked well when you/they were trying to gain support for the farming project? What didn't work well?
- Has [name of Neighborhood Association] received complaints about the farm from residents? What have residents voiced concerned about? Any positive feedback from residents about the farm?

<u>Residents' involvement with the farm</u>

- Would you say community involvement in the farm has been high, medium, low? Why do you think this is?
- In what ways have residents been involved with the farm?
  If not mentioned, probe on each of the following:
    - Buying/eating produce?
    - Volunteering?

- Coming to events?
- Participating in decision-making?

Influences on views on urban farming

- Have neighborhood residents' views of the farm changed over time? How?
  If yes, probe:
  - Why do you think this is?
- How has X farm changed the neighborhood?
- How do you think the farm might change the neighborhood?
- Is the farm run by someone from the neighborhood, or from somewhere else?
  Probe on:
  - *How does that/did that influence your neighbors thought about the idea for the urban farm?*
- Do the residents in the neighborhood grow their own food or have past experience with farming/gardening? How do you think that influences what they think about the farm?
- Do you think someone's cultural background might influence what they think about urban farming? For example, some people might associate farming with the work of the poor or oppression or even slavery. Other people might associate owning and farming their own land with a sense of freedom or power. What are your thoughts about this?
  Probes:
  - Tell me more about why you think that.
  - Do you think African American residents in this community have supported or opposed urban farming for any of these reasons? Why?
  - Do you think the farmer who introduced the idea of putting a farm in your neighborhood was aware of issues like this? Why do you think this?
  - Did any of these issues come up with the proposal for the urban farm was first introduced? If so, what was talked about? Did they come to your mind at all?
- What do you think about the food that's grown on an urban farm?
  If not mentioned, probe on:
  - Do you think people in the neighborhood want to eat these types of food?
  - Do people in your neighborhood have any concerns about eating the food that's grown on an urban farm?
- What do you think has the biggest influence on what your neighbors think about urban farming?

Final questions

- Rating exercise

- Is there anything I didn't ask you that you think is important to share with me?

Additional information to obtain

- Documents the interviewee is willing to share, such as:
    - Materials distributed to the community about the farm
    - Reports written about the farm
    - Meeting notes
    - Grant applications
    - Media pieces about the farm
    - Blog/website address, etc.
- Other people we could interview – residents who live close to the farm that would be willing to talk about their impressions of the farm (both positive and negative).

8.3 In-depth interview guide: Residents

Introduction

Thanks for agreeing to be interviewed today. I am interested in learning about the relationship community residents have with urban farms, and what Baltimore residents think about urban farming. I don't work for or represent a farm, and your answers are confidential, so feel free to be candid with me – I'd like to hear your opinions, whether positive or negative.

About the neighborhood

- To start, tell me about your neighborhood. How would you describe your neighborhood to someone who has never been here?
  Potential probes:
    - Can you tell me a little bit about the history of your neighborhood?
    - What are the strengths/good things about the neighborhood?
    - What are the problems in the neighborhood?
- Could you draw me a map of your neighborhood?
  [Provide the interviewee with a blank sheet of a paper and a pencil. The interviewee – not you – should define the boundaries of the neighborhood and decide what to include in the map. Encourage them to include places that are important to them or places they consider to be neighborhood landmarks. Do not explicitly tell them to include the urban farm in the map, but please make a note as to whether they do or not. When they are finished drawing the map, if they haven't added the farm/vacant lot to the map, ask them to do so.]

Before the farm – initial perceptions

- Tell me about when you first heard that a farm might be started in your neighborhood.

If not mentioned, probe on:

- How did you find out about it?

If relevant, probe:

- When [X] presented the idea, what were some of the positive things they said would come from having an urban farm in the neighborhood? Were any drawbacks discussed?

- What was your initial reaction to the idea of having a farm in your neighborhood?
  - Did you think using that particular lot for an urban farm was a good idea? Why/why not?
  - How did you think the farm might affect the neighborhood? *[Probe for positive and negative effects.]* What made you think this would be the case?
  - Who did you think would benefit from it?
  - Who did you think might be negatively affected by it?
- How did other neighbors react to the idea of a farm starting in your neighborhood?

  If not mentioned, probe on:
  - Was anyone skeptical about the idea? What were their concerns?
  - What do you think about their concerns?
  - Was anyone excited about the idea? Why do you think they were excited?
  - Do you think there's something unique about you – maybe your values or something about your personality – that made you more or less accepting of the farm than your neighbors?

<u>Process of trying to start farm</u>

- Did anyone – either the farmers or someone else – try to gain the support of neighbors living around the farm for the urban farming project?

  If not mentioned, probe on:
  - Who? What did they do/say?
  - Was it effective? What made you think that?
- Was the community association in your neighborhood in support of the farm?
  - What about other groups or organizations in your neighborhood?

  If relevant, probe:
  - How does the [support/lack of support] by the [community association/other organization] influence what you think about the idea of starting a farm in your neighborhood?
- What else do you think could have been done to make sure the community was accepting of the farm?
- Did anyone try to address the concerns neighborhood residents had about the idea of starting a farm in the neighborhood? How?

Current view on urban farming

- Have you been involved at all with the farm? In what ways?
    - Do you feel welcome at the farm?
    - Do you think the residents in your neighborhood feel welcome at the farm?
    - Why or why not?
- How have your views about urban farming changed since the time you first heard about the urban farm project/since the farm got started?
  Probe on:
    - What do you think it was that made you change your views?
  For active farm sites:
    - Are there things about the farm or its affect on the neighborhood that you didn't expect? (positive or negative)
- If you were to explain what an urban farm is to a friend who doesn't know what it is, what would you say?
  If not mentioned, probe on:
    - What would you say the purpose of an urban farm is?
- Do you know who [is running/would have run] the urban farm?
  If not mentioned, probe:
    - Is it someone from the neighborhood? Do you know him/her?
    - Do you think it matters whether an urban farm is run by people from the neighborhood or not?
    - What are your thoughts about an organization, a company, or the city starting an urban farm project instead of local residents?
- How do you think urban farms might change a neighborhood?
    - Probe for positive and negative changes
    - Do people in your neighborhood view these kinds of changes as a good thing or a bad thing?
    - Do you think having a farm in the neighborhood might contribute to gentrification of the neighborhood?
        - How so?
        - What does the word "gentrification" mean to you?
        - Is that a good thing or bad thing?

  Probe for active farm sites:
    - Can you give me some examples of how [*NAME*] farm has changed the neighborhood?
- Most of the time when we think of farms, we think of them being out in the country. What do you think about farms being inside cities?
- What do you think about hoop houses? *[Show photo]*
- What do you think about the food that's grown on an urban farm?
  If not mentioned, probe on:
    - Would you want to eat the food that's grown?

Influences on perceptions about urban farming

- Have you ever seen anything in the media (newspapers, TV, radio, internet) about urban farms?
  If not mentioned, probe:
  - What did you see? Was it put in a positive or negative light?
- Do you have any past or current experience with farming or gardening? Tell me about that.
- Did someone you know influence your opinion about the idea of starting a farm in your neighborhood?
- Do you think someone's race might influence what they think about urban farming?
  Probes:
  - Tell me more about why you think that.
  - What if the farmer or organization running the farm were a different race from most of the residents in the neighborhood – would this matter? Like if a white person was running a farm in a mostly black neighborhood.
  - Do you think the [farmer/organization/City employees] who introduced the idea of putting a farm in your neighborhood were aware of issues like this? Why do you think this?
- What do you think has the biggest influence on what your neighbors think about urban farming?

Neighborhood environment

Now I'd like to ask you a few more questions about your neighborhood.

- As you probably know, Baltimore has a lot of vacant lots and abandoned properties scattered around the city. Do you think farming is a good use of vacant lots?
  - Why or why not?
- Do you know whether the City government is helping to start urban farms? Should they be?

Final questions

- Rating exercise
- Other people we could interview – residents who live close to the farm that would be willing to talk about their impressions of the farm (both positive and negative).
- The last few questions I have for you are some basic demographic questions. Before we end, is there anything I didn't ask you that you think is important to share with me?
- *Have participant fill out Participant Profile. Give them the choice whether they want to fill it out on their own or have you read the questions to them. If*

they don't want to fill out all of the questions, tell them to just answer the ones they are comfortable with.

8.4 In-depth interview guide: Key stakeholders

Introduction

Thanks for agreeing to be interviewed today. For our study, we are interested in learning about the relationship urban farms have with the community and how residents of Baltimore view urban farming. This interview will be pretty open-ended, so feel free to chime in with anything you think is important to share.

Interviewee's role in urban agriculture

- Please tell me about what you do related to urban agriculture in Baltimore.
  If not mentioned, probe on:
  - Length of time involved
  - What motivated you to take on this role?

Interviewee's views on urban farming

- In your opinion, what is the purpose of an urban farm?
- Who would you say benefits from an urban farm? How do they benefit?
- Who usually runs these farming projects?
  If not mentioned, probe:
  - Is it usually someone from the neighborhood in which it's started, or from somewhere else?
- How do you think an urban farm might change a neighborhood?
  Probe:
  - Have you seen any examples of a farm changing a neighborhood?
- As you probably know, Baltimore has a lot of vacant lots and properties scattered around the city. The City of Baltimore is trying different things to make these productive spaces. One of their approaches is to encourage communities and farmers to garden or farm on vacant lots. What do you think about this approach?
- Do you think a farm is something that belongs inside the city? Why or why not?
- What do you think about the food that's grown on an urban farm?
  If not mentioned, probe on:
  - Do you think that the people living in neighborhoods with an urban farm want to eat the types of food that are grown?
  - Do you think people have any concerns about eating the food that's grown on an urban farm?

Residents' views on urban farming

- In your opinion, what do Baltimore residents think about urban farming?

Probe:

- Have you heard anyone voice concerns or be skeptical about urban farming? What were these concerns? Do you think these concerns are widespread, or just among a few people?
- Do you think that Baltimore residents' views about urban farming are the same for people who live near an urban farm versus those who maybe have never seen an urban farm?

- What do you think has the biggest influence on what Baltimore residents think about urban farming?

<u>Community support for urban farming</u>

- How important do you think it is to have support from neighborhood residents for an urban farming project? Why?
- What do you think the biggest challenges would be in getting community support for an urban farming project?

<u>Final questions</u>

- Conduct rating exercise
- That's all the questions I have for now. Is there anything I didn't ask you that you think is important to share with me?

8.5 Sample participant profile

PARTICIPANT PROFILE (C1)

1. How long have you lived in this neighborhood?
   _____ years _____ months

2. Are you a member of your Neighborhood Association?

   Yes No

3. How did you first find out about the idea to put an urban farm in your neighborhood?
   a. At a neighborhood meeting
   b. From the farmer
   c. From a friend/neighbor
   d. From a sign or flier
   e. Other: _____

4. Circle all the ways in which you are involved in the urban farm in your neighborhood:
   a. I buy produce from the farm
   b. I volunteer at the farm
   c. I go to events at the farm
   d. I am involved in making decisions about how the farm is run
   e. Other: _____

5. How involved are you in these activities?
   a. Very involved
   b. Somewhat involved
   c. A little involved
   d. Not involved at all

6. Age: _____

7. What is your race/ethnicity?
   a. Black
   b. White
   c. Asian
   d. Hispanic
   e. Other

8. Do you rent or own your home?
   a. Rent
   b. Own

9. What is the highest education level you've achieved?
   a. Elementary
   b. Jr. high (6-8 grade)
   c. High school/GED
   d. Associate degree
   e. Bachelor's degree
   f. Graduate level degree

10. What is your employment status?
    a. Full-time
    b. Part-time
    c. Occasional employment
    d. Self-employed
    e. Retired
    f. Unemployed
    g. Student

8.6 Sample oral consent document: Residents

Study Title: Exploring Community Perceptions of Urban Farming in Baltimore City
Principal Investigator: Peter Winch
IRB No.: 4640
PI Version Date: Version 1 / November 1, 2012

What you should know about this study

- You are being asked to join a research study.
- This form explains the research study and your part in the study.
- You can choose not to take part in this research study and if you join, you may quit at any time. There will be no penalty if you decide to quit the study.

Purpose of research project

The purpose of this research study is to learn about the views of people who are affected by urban farming in Baltimore City. We hope that what we learn during this study will help guide future efforts to strengthen the relationship between urban farms and community residents.

Why you are being asked to participate

You are being asked to participate in this study because you are a resident of the _____ neighborhood, where there [is a current urban farm/is a plan to create a new urban farm/was a plan to create an urban farm that was not approved by the community]. You were chosen to participate because _____. To participate in this study, you must also be age 18 or older.

Procedures

During the interview, you will be asked about your views about urban farming in Baltimore and about your neighborhood. With your permission, the interview will be audio-recorded. The interview should last approximately 1 hour. You may choose not to answer any question you are not comfortable with. We might also ask you to participate in a second interview at a later date. The second interview is also voluntary.

Risks/discomforts

We do not expect that participating in this study will create any risk for you. We will not ask you for any personal or confidential information. You will not be named in any reports or other written documents that may be result from this research study. The audio recording and transcript of this interview will be stored on a password-protected computer and will not be shared with anyone

outside the study team. The recording and the transcript will be destroyed within 6 months after the study is completed.

Benefits

You may enjoy participating in the study and hearing about the results when they come out. We also hope the results of this study will provide useful information for planning urban agriculture projects in cities like Baltimore that are in line with community residents' views and needs.

Payment for Participation

You will receive $20 for participating in the interview.

Voluntary participation

Your participation in this study is completely voluntary. You may change your mind at any time and drop out of the study.

- You may call the principal investigator, Peter Winch, at 410-955-9854 if you have any questions or complaints about being in this study.
- Contact the Johns Hopkins Bloomberg School of Public Health IRB Office if you have questions about your rights as a study participant. Contact the IRB if you feel you have not been treated fairly or if you have other concerns. The IRB contact information is:

  Address: Johns Hopkins Bloomberg School of Public Health
  615 N. Wolfe Street, Suite E1100
  Baltimore, MD 21205
  Telephone: 410-955-3193
  Toll Free: 1-888-262-3242
  Fax: 410-502-0584
  E-mail: irboffice@jhsph.edu

Permission to proceed

Do you give your consent to be included in the study?

Chapter 9. References

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Curriculum Vitae

Melissa Nicole Poulsen was born in 1979 in Helena, Montana. In 2002, she graduated from Carleton College in Northfield, Minnesota with a B.A. in Biology. She received her M.P.H. in Health Behavior and Health Education from the University of Michigan School of Public Health in 2006. She worked for four years as a Behavioral Scientist at the Centers for Disease Control and Prevention in Atlanta, Georgia, culturally adapting and implementing an HIV-prevention program for parents and youth in seven countries in sub-Saharan Africa. Melissa then went on to complete her Ph.D. in International Health at the Johns Hopkins Bloomberg School of Public Health.

During her doctoral studies, Melissa developed expertise in food systems, environmental sustainability, and public health, receiving the honor of being a Center for the Livable Future-Lerner Fellow for five years, a fellow with the Johns Hopkins Environment, Energy, Sustainability and Health Institute, interning with one of the first Food Policy Directors in the U.S., and writing Baltimore city's first urban agriculture policy plan. She also honed her skills in qualitative research methods by conducting several qualitative research projects and acting as a teaching assistant in a series of graduate-level qualitative research methods courses. Melissa currently lives in State College, Pennsylvania with her husband and two children.